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ORIGINAL COMMUNICATION.

ATHEROMA OF THE LEFT CORONARY ARTERY RESULTING IN ANEURISM OF THE APEX OF THE LEFT VENTRICLE.

READ BEFORE THE CHICAGO MEDICAL SOCIETY, JUNE 6, 1887, BY ROBERT TILLEY, M.D.

ANEURISM of the heart is sufficiently rare to justify the presentation to the profession of a single case. The rarity alone of the affection must be associated with a certain obscurity in making an ante-mortem diagnosis, and details of observation are, therefore, of manifest importance.

The patient was 57 years of age, and his occupation was that of a lawyer. His previous life was unexceptionally exemplary. He did not use tobacco in any form, and was exceedingly temperate and methodical in all his habits, his carriage was such as to suggest the impossibility of any hurry on his part. His general build may be characterized as corpulent, although when young he was very thin. At the age of 30 he was declared to be dying of consumption. Recovery, however, seems to have occurred without medical assistance.

An ill-defined malaise extending over a period of six weeks or two months suddenly increased to such an extent on the 20th of October, 1885, that he was unable to leave the house and was obliged to call assistance. This malaise consisted of wandering pains, not severe, over the chest extending to the left shoulder and down the left arm, sometimes reaching the wrist. They were not periodic, and could not be associated with any definite act of daily life, but would rather come on when any change of action was about to take place.

He first called my attention to this, thus: "I don't know whether I want to follow a doctor's directions or not. I get occasionally flying pains over my chest and in my left shoulder, but on walking about a little I can make them disappear." As he always had a marked antipathy for medicine of any kind, and I did not possess any firm conviction of any greater benefit likely to follow anything I could suggest than the benefit he claimed from exercise, I told him to continue to use the method he had found successful, and report later. At this time I had no conception of the existence in his case of atheromatous coronary arteries, nor did I suspect that the wandering pains were associated with incipient angina pectoris.

About six weeks after the interview

above referred to, an acute attack of difficulty of breathing, associated with severe coughing and anxiety of countenance, came on. From this time he left the house only for short walks. The pulse at this time was 120, feeble but regular. His breathing was very laborious. He could not lie down on the back or left side, and only for a short time on the right side. Cough was very troublesome. No special features present in the alimentary canal. On percussion no perceptible enlargement of the heart was detected; percussion also failed to reveal any enlargement of the liver. On auscultation the heart revealed no definite abnormal sounds. The principal feature which I observed was that of a asystole, the ventricles seemed to stop as though shutting down on a pledget of wool.

Later this peculiar asystole subsided. I find that *Constantin Paul quotes a case published by Potain in Gazette des Hôpitaux 8, août 1882, which, for the sake of comparison, I quote: "Aneurism of the septum always terminates fatally with more or less rapidity. Its course is acute if there has been an abscess of the ventricular walls; the rupture is followed immediately by accidents either ulcerative endocarditis with the entrance of pus and detritus into the circulation, or acute asystole from a sudden alteration of the cardiac muscle. In the former event death occurs almost immediately; in the latter within eight to twelve days. When the disease runs a chronic course it presents from time to time accidents resulting from a slight ulceration — phenomena of asystole — which last for a few days and then subside. The disease may thus run along for a number of years."

This feature of asystole struck me as the one striking peculiarity of the case.

There was at this time no œdema, no fever, no albumen in the urine.

From the beginning his condition was considered grave, and consultation was obtained from the first.

Drs. H. A. Johnson and R. H. Babcock both saw the case, and the former remained as consulting physician to the end. The various heart tonics, such as strychnia, arsenic and digatalis, were used with no demonstrable effect except this, that when the digatalis was increased so as to diminish the frequency of the heart's action, the action became so tumultuous and incoördinate that it was deemed best to let it beat at the rate that it found most convenient. In about a fortnight after the commencement of the acute attack anginal pains became more prominent, and atheroma of the coronary arteries was suspected. There was no evidence, however, of any atheroma of any superficial vessels. From this date a bottle containing carbonate of ammonia and camphor became his companion, supplemented with small pellets of nitro-glycerine, 1-100 of a grain. The latter gave more satisfaction than the nitrite of amyl. The anginal pains were not at any time characteristic for their severity, but the pallor of countenance and anxious expression were characteristic.

The feet had exhibited, on several occasions, a tendency to œdema, but about ten days before death it began to increase rapidly, and no remedies were found capable of removing it. The œdema extended gradually to the hips, abdomen and chest, and about nine weeks after the acute attacks, while walking across the room, he fell dead.

He derived marked comfort from gentle exercise, in fresh air. It is worthy of remark here that this was his own device to relieve the wandering pains that he complained of before the severe acute attacks. When the sidewalks were covered with ice so that he could not prudently walk out of doors, he would wrap up and walk in a room with the windows wide open. Nitro-glycerine and carbonate of ammonia were the only remedies that gave him any appreciable relief.

The autopsy, which he himself requested—he had a horror of being buried alive—revealed nothing remarkably peculiar except the condition of the heart. This autopsy was performed on the day following the death, by Dr. Frank Cary in the presence of Drs. H. A. and Frank

*Diagnosis and treatment of diseases of the heart. Woods' Library.

S. Johnson, R. H. Babcock and myself. The heart was somewhat enlarged, all the valves were competent, there was little or no atheroma manifest except in the coronary arteries. One of these, the left, was almost completely occluded. It was just below this manifest atheroma of the left coronary that in the wall of the left ventricle near the apex the aneurism had developed. I should characterize it as about the size of a large walnut. The wall of the heart in the thinnest part was only two millimetres thick. The aneurismal cavity was filled with blood, part of which showed signs of organization and part signs of disintegration, The clot was evidently formed at two different periods. The microscopic sections, for which I am indebted to the kindness of Dr. F. S. Johnson, show this well. There were no signs of chronic endocarditis, but some of slight chronic myocarditis.

* Bramwell divides aneurisms of the heart into acute and chronic. "Acute Aneurism," he says, "may result from anything which causes rapid local softening of a limited portion of the cardiac wall. Acute ulcerative endocarditis, acute localized myocarditis and acute softening the result of thrombosis of the coronory arteries are the conditions which are most likely to cause acute local dilatation of this description."

"Chronic aneurisms of the heart," he continues, "are almost always the result of chronic myocarditis. Fatty degeneration seems to be an occasional though extremely rare cause of this condition." He nowhere calls direct attention to an atheromatous condition of coronary arteries as a cause.

Dr. Mary Putnam Jacobi says (In Wood's Reference Handbook): "The essential cause of heart-aneurism is thus identical with arterial aneurism, the lesion of structure is however different as might be expected from the difference of tissue in the heart and arteries. In the latter, that is, the arteries, nontraumatic aneurism nearly always depends on atheroma; in the former upon fibroid disease the result of chronic interstitial myocarditis."

In the present case, I think, there is no doubt that the starting point was the diminished calibre of the left coronary artery by this atheromatous condition diminishing the supply of nutriment to the corresponding tissue and thus producing the extreme thinness of the walls in the part supplied by the artery. The clot of blood was probably the result of the incapacity of the left ventricle to completely contract and expel its contents and probably occurred in part at the time of his acute sickness about nine weeks before death.

The presence of this clot of blood fully explained the characteristic sound which I clearly recognized at the first and which I described as though the ventricle contracted on a pledget of wool.

* Bramwell, Diseases of the Heart, p. 576.

NINTH INTERNATIONAL MEDICAL CONGRESS.

HELD IN WASHINGTON, D.C., SEPTEMBER 5, 6, 7, 8, 9, AND 10, 1887.

(CONTINUED FROM THE SEPTEMBER NUMBER.)

THIRD DAY.

GENERAL SESSION — WEDNESDAY, SEPTEMBER 7TH.

The Congress convened at 10 A. M., and Professor Durante, of Rome, Italy, one of the vice-presidents, was invited to occupy the chair, whilst Professor Mariano Semmola, of Naples, Italy, delivered a general address on

BACTERIOLOGY AND ITS THERAPEUTIC RELATIONS.

The object of medicine is to cure disease. To cure diseases we must know the causes that produce them. The external causes are visible and tangible, but to discover the internal, invisible causes is the aim of medical science. To solve this problem we must employ the true method of solving all problems — the experimental method. Doctors lost themselves in fantastic speculations before this method was known. The wonderful progress of physiology has been made in the light of experimental methods. When morbid conditions had been studied, instead of going on with the same careful and slow research, physicians wanted to hurry on, because they wished simply to cure the sick. To apply the experimental method and, at the same time, go fast is, in the nature of things, impossible. Thus it happened while physicians were making experiments in the laboratory, instead of having patience to master their studies, they came at once to a conclusion. New hypotheses had to be made, and without knowing it they began again the same errors that had characterized the medicine of an earlier day. New systems thus came into the field, that were the opposite of the experimental method. If medicine is to progress and be a science, it must not leave the experimental method, otherwise there will be nothing but renovations of error and loss of time.

THE ERROR OF THE DAY

is bacteriology considered as the key to all pathology. Bacteriology should be studied, because it teaches what is in the microscopical world, the existence of which we had never dreamed—a world in which man lives and which is filled with

ENEMIES OF MANKIND.

We drink millions of microbes in water, and respire millions in the air. Sometimes these microbes affect us—perhaps killing in a few hours.

When we strive to cure the sick, we must proceed cautiously, because, before there has been a careful demonstration, if we attempt to deduce a remedy, there is danger of doing harm to the sick instead of curing them. This is the great harm modern bacteriology does. Doctors concluded at once that microbes were the cause of disease, whereas, in many cases, microbes are but

EFFECTS OF DISEASE.

We ought to reproduce the disease artificially by a microbe before concluding that it is the cause. The experiments made have not given any satisfactory results, except in carbuncle and tuberculosis. To conclude hastily that this or that microbe is the cause of any disease, is but to ignore or set aside the experimental method. The demonstration which the experimental method demands in this case would be complicated, because we would not only have to know that the microbe existed, but we would have to know what was the condition of the blood necessary to the culture of that particular microbe, and science tells us that, for the present, this is a problem we cannot solve.

We know very little of the normal condition of the blood, and biological chemistry is still in its infancy. Man cannot separate himself from these millions of parasites among whom he lives. That bacteriology may be a guide in the cure of disease, we must not only learn all we can of the microbe itself, but, more important than all, must ascertain all that is possible of the conditions of the field of culture. The science of the present knows nothing of the conditions of these fields of culture in living organisms. It is thus evident that in the present condition of bacteriology it cannot be taken as a guide for the treatment of internal diseases. The older school of medicines spoke of organic dispositions, or tendency to such and such a disease. This expression had no meaning, but it expressed the

fact. When bacteriology speaks of a need for a special field of culture it says the same thing, because we do not know of what the field of culture consists. Therefore, this cannot be called a science, because a science is never composed of unknown things; it goes from the known to the unknown. If a man supposes a fact instead of demonstrating it, the phenomena of nature are not reproduced. When he resorts to hypothesis the power of man disappears. If nature's laws are not respected, the telephone does not work, the electric light does not flash, the steam-engine stops. The doctor, then, is the only one who pretends to become the master of nature without knowing her laws. Referring again to the failure of medicine to follow up a discovery in the scientific way with thorough research and demonstration, and its tendency to accept conclusions quickly, Professor Semmola said that modern bacteriology may lead the way to the most fruitful field of inquiry in the future, but for the present it has produced no practical results in the cure of internal diseases. It has not, he claimed, been demonstrated in what measure microbes are the causes of diseases. He therefore hoped that the younger generation would continue ex perimental researches with the thoroughness o method which the great masters have transmitted to us. They must renounce their preconceived ideas in medicine, and interrogate nature without torturing her. Scientific independence must be preserved. They must not proceed without measuring their steps. He trusted that his desire for scientific independence in such researches would be echoed in this land of independence.

SECTION ON GENERAL MEDICINE.

Third Day—Afternoon Session.

Professor John A. Octerlony, Louisville, Kentucky, read a paper entitled

THE STUDY OF THE NATURAL HISTORY OF DISEASE.

He was deeply impressed with the importance of the subject in its practical bearing upon the solidity and permanency of medicine as a science. In endeavoring to discuss this he desired not to be understood as belittling in any way that science. It is not only well to admire past achievements, but also thoroughly to review the past to ascertain its deficiencies and seek the means most likely to overcome them. The study of the natural history of disease is most conducive to this end.

This subject is difficult on account of the vast scope and the complexity of disease. In looking over the ground we see in every department of pathology unmistakable evidences of the all-pervading presence of laws.

The eagerness of the physician to relieve pain and restore health often causes him to manifest distrust in nature's agency in the cure of disease. Diseases themselves are perfectly natural though not normal conditions of the living body; and the same power which called them into being may also not unreasonably be supposed to be adequate to their removal.

The truth is, nature possesses far greater power in curing disease than is admitted. A knowledge of the natural history of disease is the necessary basis upon which to estimate all medication.

The multiplicity and divergence of scientific opinions result from the neglected study and consequent ignorance of the natural history of disease.

To arrive at a proper knowledge of the natural history of disease, the co-operation of large numbers of medical men throughout the world is necessary, dissecting and attending to the various morbid conditions which affect the human race. These observations must include patients affected with various diseases modified by age, sex, occupation, etc., the duration of the malady, the events marking its course, the mortality, and mode of death. We shall then be in a position to judge with positiveness the value of a drug in shortening disease, preventing complications, or averting a fatal result. There are many obstacles to the execution of such a plan. To some it will appear culpable to withhold the assistance of art, and consign a patient to the exclusive care of nature. Independent of the consideration of the benefits to be derived therefrom, all objections to such experimentations may be fairly met by the following arguments:

First.—Since we do not hesitate to subject patients in our public hospitals to treatment with medicines the action of which is imperfectly or not at all known, and consider it legitimate, it can be no less so in similar cases to simply watch the operations of nature.

Second.—It must not be overlooked that nature, having inflicted disease, is also in many instances adequate to its cure. This is true of both light and severe diseases—those in their nature grave, such as malignant fevers, tuberculosis and cancer spontaneously recover.

It is beyond dispute that the worst forms, and apparently hopeless cases of fever, recover unaided by medicine. Recovery from tuberculosis has most frequently occurred under simply good hygienic surroundings. Hence the steadily increasing favor with which the profession regards the climatic treatment of this formidable enemy of our race.

Third.—The strong tendency to recovery in acute affections is often admitted, and is a good reason in many cases for reducing medicinal interference to a minimum, and in many cases amply justifies allowing the disease to pursue the undisturbed and natural course.

Fourth.—The character of self-limitation which we now know to characterize many diseases should be a warning to those who entertain exaggerated ideas of the results produced by their treatment, and an encouragement to those desiring to study the natural history of disease.

Fifth.—Were it not that the *vis medicatrix naturæ* is no imaginary power, but a living reality, it would be impossible to understand how it is that many quite feeble or absolutely inert medicaments could have attained such a high reputation in the treatment of various and severe affections. To-day "sage" is known to have no medicinal power, yet its history is classical, and it has received the indorsement of the learned as an effective medicinal agent. How many drugs have, like the garden sage, been lauded for imaginary virtues, but after awhile have sunk, like it, into well-merited disuse. Yet while in vogue, and medical journals were filled with accounts of their vast powers, it was the *Great Silent Mother* who wrought the cure.

Sixth.—The indisputable fact that recoveries take place from similar diseases under quite opposite plans of treatment allows no other inference than that the recoveries are due to nature alone.

Seventh.—When one recalls how marvelously patients sometimes get well under the rude and pernicious medication inflicted by quacks, one is forced to conclude that nature is not only adequate to remove the original disease, but also to overcome the artificial disease not infrequently superadded by the *energetic ignorance* of the practitioner.

He was well aware that physicians cannot if they would, and should not if they could, forego all medicinal treatment in the management of all the sick under their charge. But in private practice instances will occur when such a course would be both safe and proper.

The greatest field for observation is the hospitals. It is well to set aside a certain number of cases and compare the results of medicinal and non-medicinal treatment.

Medical students should be taught not to believe in the exclusive power of art in the treatment of diseases, but more prominently the utility of studying their natural history.

Dr. Cronyn, of Buffalo, New York, discussed he paper. He thought that, as it is the natural history of disease that teaches us, attention to it is best. After all, it often depends upon nature, keeping the patient quiet and assisting nutrition. The laity think diseases due to a poison varying in degree and intensity, according to the severity of the illness.

Dr. H. B. Hemenway, of Kalamazoo, Michigan, said: Our work is not as physicists, but as doctors, teachers. I fully agree with all that has been said in the paper. We, as physicians, have made the mistake of following the popular demand "to do something." In the methods of our studies of disease we should seek to learn the cause, general progress, and termination. We ought to study to aid recovery. We can do our patients but little good in any other way.

Dr. W. J. Scott, of Cleveland, Ohio, was pleased with the paper. He believed we would have a broader foundation by studying the history of the treatment of disease—what has been done, that we may know what ought not to be done. He objected to the too free use of compendiums of medicine instead of thorough and detailed works. He had faith in medicines. He then spoke somewhat out of line with the subject of the paper, upon the increased efficacy of our materia medica and the action of drugs upon specific diseases.

The President, Professor A. B. Arnold, said: If we are called to see a patient in an attack of apoplexy, the friends invariably want the physician to do something when we know that the patient ought to be kept quiet, to allow the clot to form. There is a form of diabetes where an excess of sugar taken into the body will be eliminated by the kidneys in the urine. We know that by taking only as much sugar as can be assimilated the patient will be cured. There is another form of diabetes where the sugar is from the animal tissues, and consequently this is not improved by such treatment. These he gave as examples showing the advantage of a correct knowledge of the natural history of disease in determining treatment.

Dr. Thomas H. Manley, of New York, N. Y., believed each disease had a special course and tendency to recover. He discussed quite freely the use and abuse of drugs.

Professor Octerlony, closed the discussion by saying that he had been edified by the spontaneous expressions of regard for remedies; there was certainly not a word in his paper in reference to this subject. "I thought when Dr. Scott said so emphatically that he believed in remedies that perhaps he thought I did not." He wished to see an exact science, which could only be realized by the method suggested in the paper.

Dr. Pavy, of London, England, remarked, "I felt that I could not leave without saying I am heartily in accord with the idea that there is a natural history of disease, just as we each have a natural history of ourselves. By studying the natural history of disease we enable our own natural history to have its free play." He believed we needed, as physicians, more knowledge of agencies to cut short the natural history of disease. We also needed medicines to influence the mind as well as the body.

THE DISEASE OF INEBRIETY AND ITS TREATMENT.

Dr. T. D. Crothers, of Hartford, Connecticut, read a paper with this title. He mentioned the historic fact that inebriety was called a disease long before insanity was thought to be other than spiritual madness. On an old papyrus found in one of the tombs of Egypt, dating far back into antiquity, a clear recognition of inebriety was found. Herodotus wrote, four centuries before the Christian era, that drunkenness was both a disease of the body and mind. Other writers were noted who had urged this same idea, for centuries down to the present. By a strange shifting of events, insanity, which was supposed to be a spiritual affection until a comparatively recent date, is now studied as a physical disorder, while inebriety, which was mentioned as a disease twenty centuries ago, is still invested with the superstition of a spiritual origin.

Dr. Crothers said when inebriety is seen from a scientific point of view, it is found to be controlled by laws which vary according to certain physiological, psychological, and physical forces, of which heredity, environment, culture, nutrition, brain-and-nerve-vigor, are most prominent. When accurately recorded histories of many cases of inebriety are studied and compared, certain fixed ranges of causes appear, which follow some regular order of movement. These causes were summarized as follows:

1. Certain conditions of heredity, certain physical and psychical shocks and nerve-injuries are followed by inebriety in a large proportion of cases.

2. Certain structural changes of the brain and functional perversions, certain disturbances of nutrition and nerve-irritation, precede inebriety in many cases.

3. Certain unstable brain-organizations, regular, retarded, and defective brain-developments, etc., are apparent causes in many cases.

4. Certain diseases seem to have a special predisposition to develop into inebriety without any exciting causes.

These groups were discussed in detail.

In dipsomania and periodical inebriety a condition allied to epilepsy was mentioned. The explosions of the craze for drink were called nerve-storms, the regularity and uniformity of these periods were mentioned.

The uniformity of the symptoms of inebriety were described. Inebriety was affirmed to be increasing, and becoming more concealed every year. The coarser features were giving away to mania and suicide, etc.

The evidence of drink-cycles were described, and the temperance movements were affirmed to be reactions of the drink-cycles, and governed by laws and forces unknown.

In the treatment, work-house hospitals, conducted on a military basis, were urged, such hospitals to be built from the license fund and made like quarantine stations, where the patients could be controlled and placed in the best condition for recovery.

Different plans of treatment were mentioned in detail, and the profession urged to take up this subject and solve its problems along the line of accurately observed facts.

Professor George E. Stubbs, of Philadelphia, Pennsylvania, was reminded, by the paper, of what Professor O. W. Holmes once remarked: "That in order to treat some diseases, we needed to go back two hundred years." When we know that we are dealing with children from hereditary drunkards, we should properly advise about the bringing up of these children. He, too, had profound respect for church influences, but these children must abstain from alcoholic beverages if they are to be given the best chance of avoiding the unfortunate course of the parent.

Professor William F. Waugh, of Philadelphia, Pennsylvania, said: I believe in these remedies but for other reasons than that claimed. Inebriate asylums cure only to make the patients worse. On account of the fact that he has been kept idle, supported by kind friends, and having every attention given him, he becomes indolent and careless, desiring only to be pampered. The patients ought to be made to do physical labor. Too much is now attributed to mental influences; they also need attention given to the physical part of their being.

He had a case where a week before the attack of inebriety there would be an absence of bile in the passages.

Another case was presented to him where there was a red deposit in the urine preceding this attack. Appropriate remedies relieved these cases.

Dr. Cronyn, of Buffalo, New York, spoke of the Italian method of treatment, which consists

of giving the patient food steeped in wine until he gets a strong dislike to alcoholics. He claimed that this treatment seldom failed.

Dr. Crothers replied that these cases are practically insane. There is no one plan of treatment. Inebriety ought to be considered a disease as much as typhoid fever, and we are as capable of caring for it as any clergyman can be. They are emotionally diseased, and this conversion is a part of that disease. All these methods, such as moral influences, etc., are good, but such treatment is incomplete.

Dr. Octerlony said that some of the greatest drunkards he ever knew had been clergymen, on account of which it seemed improbable that moral influences alone were sufficient for a cure.

Dr. Cisna, of Pennsylvania, then read a paper on

TYPHOID FEVER.

SECTION ON THERAPEUTICS AND MATERIA MEDICA.

WEDNESDAY, SEPTEMBER 7TH—THIRD DAY.

The first paper read was on

RHAMNUS PURSHIANUS.

Dr. John E. Brackett, of Washington, D. C., gave a botanical and chemical description of rhamnus purshianus, or cascara segrada. He considered the fluid extract, given twice daily in doses of five to fifteen minims, to be curative in chronic constipation, but the conditions favoring the occurrence of the constipation should also be corrected.

Dr. Murrell, of London, England, did not consider that the claims for special virtues in this drug had been well supported. He did not regard it as superior to the other varieties of rhamnus.

Dr. Phillips had obtained such results in chronic constipation that he had been much pleased with it. He had found in it points of superiority to both senna and rhubarb.

Professor F. Woodbury, of Philadelphia, Pennsylvania, said that in many cases of hæmorrhoids accompanying constipation he had found both conditions disappear simultaneously under the effects of cascara, especially in cases of women, who are liable to suffer with these disorders.

Dr. Ralph Stockman, of Edinburgh, Scotland, read a paper entitled

ON THE PHARMACOLOGY OF SOME BODIES DERIVED FROM MORPHINE.

The experiments were conducted jointly by D. B. Dott, F.R.S.E., and Ralph Stockman, M.D. The relationship between chemical constitution and physiological action must always be a subject of deep interest to pharmacologists. In this short paper they proposed to mention briefly the changes in action resulting from various modifications in the constitution of morphine.

It was found by How, in 1854, that by acting on morphine with methyl iodide, a body was obtained which he named hydriodate of ethylmorphia, and which he regarded as a substitution product, the methyl iodide being supposed by him to replace one of the hydrogen atoms in morphine. In the light of our present chemical knowledge we regard How's body as an addition product, iodide of methyl (CH_3I) being simply tacked on to the morphine molecule.

In 1869, Crum Brown and Fraser investigated this body among others, and showed that the original action of morphine is quite lost and a curare action substituted in its stead. From their nomenclature there can be no donbt that these observers regarded such bodies as addition and not as substitution compounds. Notwithstanding this, we find that in all text-books and reference-books these substances are always named and described as if they were substitution and not addition bodies. It is at present generally held that the substitution of methyl for hydrogen in alkaloid causes the latter to act like curare, no matter what its original action may have been. The addition products, however, are very different in action from the substitution products.

The formula of morphine is $C_{17}H_{17}NO_3(OH)_2$ and it contains, therefore, two molecules of hydroxyl. It is the hydroxyl-hydrogen atoms which are replaced most easily by alcohol radicals. With regard to the action of morphine, it may be divided into two stages—(1) narcosis succeeded by (2) tetanus. Methylmorphine, $C_{17}H_{18}(CH_3)NO_3$, is morphine in which one H has been replaced by CH_3. Codeine has the same constitution, and this body is simply codeine prepared artificially from morphine. The action is exactly the same as that of codeine derived directly from opium.

Ethylmorphine, $C_{17}H_{18}(C_2H_5)NO_3$, has the same action exactly as methylmorphine.

Acetyl morphine, $C_{17}H_{18}(C_2H_3O)NO_3$, and diacetylmorphine, $C_{17}H_{18}(C_2H_3O)_2NO_3$, have a similar action to the two preceding bodies. That is, they produce narcosis in very small doses, which is followed by tetanus when larger doses are given. All these bodies are much more active than morphine, and smaller doses are required. In dogs, however, they produce much greater distress and much more marked vomiting and diarrhœa. From our examination of their action, we think that none of them are in a position to replace morphine clinically.

Dr. George S. Hull, of Pennsylvania, inquired

if the author could explain why the acetyl compound exerted such exaggerated effects as compared with the methylmorphine.

Dr. Stockman said that he could not explain this at present, but that he hoped to do so in the future, as these investigations are still in progress.

Dr. Murrell spoke of the usefulness of apomorphine as a prompt emetic. The rule laid down in the British Pharmacopœia to prepare the solution extemporaneously he regarded as puerile. The solution changes color, but retains its physiological effects for years. He had tried apocodeine, but had not been satisfied with the results and had gone back to apomorphine. In regard to codeine, he regarded it as less satisfactory than morphine and its employment in diabetes as merely due to fashion, and that the profession will eventually go back to morphine.

Dr. Stockman: Codeine is really the more poisonous of the two, although it is usually given in much larger doses than morphine is.

Dr. Brackett believed that codeine was less irritating to the stomach than morphine, and he was pleased with it in cough mixtures, in cases where morphine could not be given.

Dr. A. L. A. Toboldt, of Philadelphia, Pennsylvania, read a paper on

CARLSBAD MINERAL WATERS.

In cases of chronic hypochondriasis he obtained remarkable results from the use of the imported Carlsbad waters. The salts obtained by crystallization were less efficient, but the quellsalz or sprudel-salz powder, given in aerated or plain water, were found to be a good substitute. Mild cases of diabetes mellitus were entirely relieved. One case of obesity lost twenty-six pounds in less than four weeks under the use of the salt. The improvement in this case was permanent.

Dr. George S. Hull, of Chambersburg, Pennsylvania, read a paper on

SO CALLED ANTISEPTIC ACTION OF CALOMEL WHEN GIVEN IN LARGE DOSES.

In cases of dysentery most prompt results in relieving tormina and changing the character of the stools were manifested. It acts as a cholagogue, producing a free flow of bile, sweeping out the contents of the bowel, and as a mercurial it exerts an antiseptic action. In cholera its usefulness in large doses has been advocated by some and denied by others.

The relative value of large and small doses of calomel were freely discussed by the members of the section.

In closing the discussion Dr. Hull said that he was dealing with epidemic dysentery and not with ordinary dysenteric conditions. The first effect of the calomel is to empty the bile-ducts and get a large flow of bile, and relieve the congestion of the liver and intestinal vessels. The second effect is due to the solution of the mercurial in bile, as pointed out by Headland, and this probably acts as an antiseptic in the bowels. The object is not simply to purge the patient, but to obtain a copious bilious discharge from the action on the liver. Where the tongue was most coated he got the best results. He believed that patients are killed by the use of opium and astringents.

SECTION ON ANATOMY.

THIRD DAY—MORNING SESSION.

Dr. Joseph N. Dickson, of Pittsburgh, Pennsylvania, then read a paper entitled

ANATOMICAL CONSIDERATIONS IN REGARD TO THE AMPUTATION AND DISARTICULATION AT THE ANKLE-JOINT, BY A NEW METHOD.

This method was first made public in 1875, and later in 1881. An incision should be made in advance of the line laid down by Syme, around the sole of the foot from malleolus to malleolus, and also an incision a little above the plane of the articular face of the tibia. The disarticulation was carried out by division of the ligaments of the ankle-joint, and the dissection was begun from above downward and backward, keeping the lateral section in advance of the posterior one. As the knife was carried backward and downward it included the periosteum and bursa between the tendo Achillis and the head of the os calcis. The advantages of this operation are a long plantar flap, shortening of the superior section, division of the malleoli obliquely, and, as stated above, preservation of the bursa between the tendo Achillis and the head of the os calcis. His methods of dressing were also simple. The oblique division of the malleoli allowed a better adaptation of an artificial foot and leg. Of fifty-two cases three deaths occurred, one or two of which were complicated by other injuries. The average stay in hospital was twenty-one days, and this included patients from four to sixty-five years of age.

AFTERNOON SESSION.

Dr. H. C. Boenning, of Philadelphia, Pennsylvania, read a paper regarding

DESTRUCTION OF THE DISSECTING-ROOM OFFAL,

in which he spoke of the difficulties of disposing of the waste anatomical material. He enumerated the most usual way of getting rid of this offal by burial, storage, cremation, by alkalies, by

mincing it and throwing it in the sewers, by giving it to the buzzards, and by boxing it up and sending it away. He found great objections to all these methods on account of expense and trouble. He thought he had found the solution of this unpleasant problem by the use of the Gregory furnace, the principles of which were so simple and cost of construction so slight. He found that the small cost of fuel and the small amount of ash left, and the entire absence of foul gas, rendered it an indispensable accessory for every school of anatomy. The furnace was lined with asbestos upon the firebrick.

Dr. Boenning further reported a curious

ANATOMICAL ANOMALY.

In the subject, a colored female, aged thirty, was found an entire absence of the arch of the aorta. There were two vessels going from the left ventricle, the one up to supply the head, neck and upper extremities, and the other down to become the thoracic and abdominal aorta. In other respects the subject was normal.

SECTION ON OPHTHALMOLOGY.

THIRD DAY—MORNING SESSION.

Professor F. C. Hotz, of Chicago, Illinois, read a paper entitled

RESTORING THE NORMAL POSITION OF THE FREE TARSAL BORDER IN TRICHIASIS.

The essayist began by the introduction of a few anatomical facts bearing upon the subject. He showed that the free edge of the tarsal cartilage in the normal eyelid is placed at an angle of ninety degrees to the surface of the eyeball, and that the eyelashes are inserted at an angle of about ninety degrees to the free border of the cartilage. The angle made by the hairs with the free border may be considerably altered, as in blepharitis ciliaris, without the hairs touching the cornea or surface of the globe. But if the free border of the cartilage is turned inward by shortening of the conjunctival surface of the cartilage from shrinkage caused by inflammation, then it is easy to see how the hairs will sweep over the cornea. This may be remedied either by lengthening the posterior or shortening the anterior surface of the cartilage. It is not necessary, nor does it occur that the curve of the cartilage is changed. Lengthening the posterior surface is impracticable, but it is proposed to show how the position of the free edge can be restored by shortening the anterior surface. An incision is made just below the upper border of the tarsal cartilage, the lid being stretched downward by an assistant, and the skin and muscular tissue dissected off from the cartilage down to the roots of the cilia. Then an incision is made directly back through the cartilage to the conjunctiva, met by another starting from a line about two millimetres above, and the wedge-shaped piece removed. A narrow ribbon of skin being now cut from the edge of the flap, it is replaced, and the sutures carried in through the edge of the flap, then through the upper border of the cartilage and out through the upper margin of the incision in the lid. The result of this procedure is apparent, the apposition of the edges of the wedge-shaped wound of the cartilage is good without sutures, and the normal appearance of the lid restored. To avoid cutting through the conjunctiva when making the incision through the cartilage the tactile sense of the finger placed on the inner side of the conjunctiva at the free border is sufficient, but a button-hole at this point does no harm, and does not affect the result of the healing.

Professor S. J. Jones, of Chicago, Illinois, said the difficulty of treating these cases of trichiases satisfactorily, and the importance of doing so, had been made manifest in the many different operations which had from time to time been devised for relief from the affection. Nearly all of them gave some temporary relief, but it is desirable to secure more lasting results.

In estimating the advantages to result from the operation as advocated by Professor Hotz, the risks to the integrity of the eye-lid from the extensive dissection must be considered, as well as the cosmetic effect after cicatrization.

From the statement made that the operation may be repeated with safety, two conclusions may naturally be drawn, viz.: That the primary operation may also be performed with safety, and that it is to be understood that it becomes necessary to repeat the operation. As to permanency of relief obtained by this operation, which is one of the most important considerations in connection with all the operations for the remedy of the affection, Professor Jones stated that several of the cases, which had previously been operated upon by Professor Hotz by this method, either as originally proposed or as modified by him recently, had subsequently been under Professor Jones' care, in which the relief at first obtained had not continued. These patients had been seen after intervals varying from a few months to a year or two. Either these must have been exceptional cases, or this mode of operating does not seem to afford results that are much more satisfactory than others obtained from the various methods of operating in the past.

Professor Frothingham, of Ann Arbor, Michigan, thought that Professor Hotz's operation will give better results than anything we now have.

The principal trouble will be in reducing the relaxation of tissue.

Dr. J. L. Thompson, of Indianapolis, Indiana, said that while country doctors could not muster as many cataracts as some of our foreign brethren, they had an abundance of this variety of trouble. He thought that no one operation would ever be found suitable for all these cases, and that procedure must be modified to suit circumstances.

Professor P. D. Keyser, of Philadelphia, Pennsylvania, had had considerable success by removing the entire cartilage.

The President said that Dr. Hotz had apparently dropped the idea of curving out the cartilage, and he wished to know the reason. The reply was that the idea of the incurvation of the cartilage had been found to be incorrect, and that therefore there was no need to alter the curve.

Dr. B. Pitts, of St. Joseph, Missouri, next read a paper on

THE BEST METHOD OF OPERATING FOR ENTROPION.

His paper was an exposition of the advantages of electrolysis, not only in removing the troublesome hairs which had assumed faulty position, but also in producing resolution and absorption of the thickened and infiltrated tissues, and in this way, even when relief was only partial, preparing the way for the easier performance of blepharoplastic operations.

Dr. W. F. Holcombe, of New York, N. Y., spoke of a method which he had put into practice, of placing the hairs in position, turned away from the cornea, and holding them in that position by silk surgeon's plaster. He had invariably had excellent results, and renewed the application from time to time, as required.

Dr. E. Landolt, of Paris, France, read a paper on

OPERATION FOR STRABISMUS.

He called attention to the marked peculiarities distinguishing this from all other operations on the eye, because it always concerns both eyes. Squint is always binocular. A man with one eye does not squint. Cyclops has no squint. Cataract and other operations may be done without taking into consideration the condition of the other eye, but not so with strabismus-operations. He dwelt upon the importance of the precautions to be taken for the success of the operation, and the causes of convergence and divergence. A most powerful aid in the correction of squint is the desire for binocular vision. Without binocular vision there is only an apparent cure, a cosmetic effect, because it leaves out the most powerful aid in the cure of strabismus. It is necessary before operation to determine the nature and measure, the degree of the refraction and accommodation, to find how far vision has been lost, and to remedy it if possible. The agents for this purpose are atropia, glasses, cessation from work, and orthoptic exercises. He never operates without satisfying himself that he has got the full effect of non-surgical measures. If the correction is made in the child while young and without these precautions, divergence may occur later. The difficulty of determining beforehand just how much to do to get a certain effect was remarked, and that it was better to do too much than too little. It is easier to diminish than to increase the effect. Dr. Landolt never operates on two homonymous muscles at once. He rather does a tenotomy of one, and an advancement of its antagonist. The remedies for over-effect in operations for convergent squint are stoppage of atropia, removal of stitches from advanced muscle, and use of the other eye. No case should lose its power of convergence or divergence after the operation, as without that power binocular vision would be impossible. If divergence persist, advance the tenotomized muscle. This can easily be done to the tenth or twelfth day.

In divergent squint, on the other hand, the danger is in doing too much. If the divergence is of long standing and the eye amblyopic, then tenotomize with advancement, or do two tenotomies. Do not use atropine, but exercise the eye in the required direction. He often prefers advancement to tenotomy to remedy faulty position. It is more complicated but not more dangerous, and has a greater and more favorable effect than tenotomy. The operation for strabismus is not to be considered as a cure, but only as an adjunct to orthoptic treatment.

THIRD DAY—AFTERNOON SESSION.

Dr. George F. Stevens, of New York, N. Y. read a paper on

SOME IMPORTANT PROBLEMS RESPECTING INSUFFICIENCY OF THE OCULAR MUSCLES.

He said that anomalies of the ocular muscles were of as frequent occurrence as those of refraction and accommodation, while the literature of the subject was very scanty, and what existed would lead one to infer that only one of the muscles was liable to insufficiency—the internus—while the deviations in other directions had been ignored or barely mentioned.

The object of the paper was stated to be to suggest certain problems, rather than to explain apparent contradictions. For instance, a case showed with a prism over one eye, insufficiency of the externi of 8° at twenty feet, and at one

foot insufficiency of the interni of 10°. There was an adducting power of 50°. Now, there could not be an insufficiency of both interni and externi at the same time. Another case, with the prism eliminated from the question, had diplopia, homonymous of 4° at twenty feet, and crossed of 5° at two feet. Here seems to be a contradiction of results and a problem to explain.

Dr. Stevens then entered into an explanation of the terms which he used in designating the muscular variations. He uses Orthophoria to express the correct equable balance; Heterophoria to express any departure from it. He divides Heterophoria into Esophoria, a tending of the visual lines inward; Exophoria, a tending outward; and Hyperphoria, a tendency of one image to rise above the other. Latent heterophoria is as common as errors of refraction are, but is often overlooked, and is much more difficult to discover. In case hyperphoria exists, in what way are we to determine in which muscle the fault lies? Again, how shall we determine the absolute amount of anomaly and the best manner of procedure? Dr. Stevens then detailed his own mode of examination, always prescribing prisms of a degree somewhat less than the hyperphoria. He believed it was better to correct too little than too much. He does not believe that prisms are curative or permanently beneficial, but that they are of much use in diagnosis.

Professor J. F. Fulton, of St. Paul, Minnesota, in a paper, entitled the

ADVANTAGES OF EARLY OPERATION IN STRABISMUS,

spoke of the difficulty of overcoming diplopia or amblyopia where they exist after operation. He agreed with Soelberg Wells, that supression of the image results in amblyopia from disuse, where the trouble occurs in children, and even in cases where the difficulty is of a later date. He favors operating in children at an early date. If operation is not admissible, then the other eye should be covered, and the squinting eye exercised carefully at short intervals. Amblyopia met with in strabismus is either primary or secondary. If primary and congenital nothing can be done, but he thought many cases were secondary and due to the same cause as the squint. The vision of the defective eye sometimes rapidly deteriorates when the image is suppressed. A case in point was one where V. $=\frac{20}{40}$ in the right eye, and $\frac{20}{60}$ in the left, raised to normal by a suitable glass. Some time after the fixing eye was lost by accident, when the left eye was found to have only $\frac{20}{80}$. This was raised, after use for some time, to $\frac{20}{60}$. Other cases were quoted, of two members of the same family, one of whom was operated on, with the result of improving the vision from $\frac{20}{40}$ to $\frac{20}{30}$, while in the other, which was let alone, the degree of strabismus remained stationary, but the amblyopia increased.

Dr. C. H. Abadie, of Paris, France, read a paper on

FAULTY EYE MOVEMENTS AND THE MEANS OF REMEDYING THEM.

He reviewed the modes of diagnosis, particularly in relation to the differentiation between those cases that require complete and partial tenotomy, and dwelt on the ability to control the amount of correction by removing more or less of the muscular fibers. It is easy to change a partial tenotomy into a complete one, if it be necessary.

Dr. E. O. Shakespeare, of Philadelphia, Pennsylvania, read a paper entitled

ON THE STRENGTH OF THE SUPERIOR RECTI MUSCLES AS A CAUSE OF ASTHENOPIA.

He found many cases of asthenopia not relieved by correction of the refraction, and external and internal recti in which there was want of proper action of the superior or inferior recti. In testing, we may find that the displacement of the image is greater when a prism is placed over one eye than when over the other. If a correcting prism be used it will be found that one superior rectus is stronger than the other. To correct the muscular error, if there is an error of refraction, he decenters the lenses, and if no refractive error is present, then he puts on prisms.

Dr. Landolt, of Paris, France, gave a demonstration of his method of strabometry, and showed how easily the patient and tapes were placed in position and the accuracy of the result. The tapes are made by Dubois, rue Monsieur le Prince, Paris, France.

Dr. H. Power, of London, England, after stating that it was not so long since the operation was done, like dividing a tendon in orthopedy, said that he is not now so certain as formerly of a positive cure. A great deal of care is now taken of the cases before operating, and even with it all, we will have cases that appear to be just as bad after operation as before.

Dr. Shakespeare rose to ask about the successive removal of muscular fibers by Dr. Abadie in small degrees of insufficiency. He wished to ascertain something of the permanency of the relief afforded.

Dr. Landolt, in replying in the absence of Dr. Abadie, said that he could not answer that question, as he had never done that operation, and probably never would do it. He always divided the whole tendon. He believed that Dr. Abadie claimed a very good and durable effect.

Dr. G. S. Norton, of New York, N. Y., asked if Dr. Stevens would tell what was the matter where both external and internal insufficiency appeared to exist, without hyperphoria. The doctor replied that that was just one of the problems he had submitted to the section, and that he did not know.

Dr. J. A. White, of Richmond, Virginia, spoke of the great value of Dr. Landolt's paper, and added a few remarks on his own results in advancement of the capsule, with which he had obtained as good results in cases of considerable degree as by advancement of the muscle.

Dr. Thompson, of Indianapolis, Indiana, was afraid that after all a large proportion of cases return to their original condition.

The president submitted a question as to the time for operation.

Professor D. S. Reynolds, of Louisville, Kentucky, suggests the exercise of the retina with strong lenses, even where considerable amblyopia exists, with the hope of improving vision before operating.

Dr. B. J. Baldwin, of Montgomery, Alabama, is satisfied that there are many cases in which amblyopia may be prevented by an early operation. A year or two ago he believed that amblyopia was congenital, but he does so no longer.

Dr. Landolt, in closing, thanked the section for their kindness and indulgence, and expressed his pleasure at the free discussion which had been drawn out.

Dr. A. G. Heyl, of Philadelphia, Pennsylvania, then addressed the section on

ABNORMALITIES OF THE VISUAL AXIS.

He said that the definition of the visual axis is involved in obscurity, and is as well a matter of extreme importance. He reviewed the terms and definitions at present used, showing their incorrectness, as Gesichtslinie, Blicklinie, and their mechanical and not physiological basis. Collimating axis is better, but it belongs essentially to monocular vision, in which one eye dominates over the other.

His true definition is a line from the macula, directed directly in front when the eye muscles are in a state of rest or equilibrium. It is a conception low down in consciousness, as is the conception of the median plane.

Through the pull of the tendons on the sclera, the recti muscles keep the macula pointing straight ahead. He then entered into the subject of the origin of the macula—whether from the fœtal cleft, which would call for a rotation of at least ninety degrees, which is said to have been observed. Then he says: "My position, for want of a better, is that the pull of the recti, antagonized by the ciliary muscle, is the factor in the production of the macula."

Dr. Ole Bull, of Christiania, Sweden, wished to know how Dr. Heyl accounted for the existing of two maculæ in some birds with restricted vision.

Dr. Heyl, in closing, in answer to Dr. Bull, stated that he knew that those cases existed, but that he would have to examine the arrangement of the muscles before being ready to explain it. He thought the same process of tension might take place in two different directions.

SECTION ON OTOLOGY.

THIRD DAY.

Dr. R. Tilley, of Chicago, Illinois, read a paper on

INHERITED SYPHILIS AS A FACTOR IN SUPPURATIVE INFLAMMATION OF THE MIDDLE EAR.

He expressed surprise at the marked absence of reference to this subject in general syphilography and otological literature. Politzer, in his text-book, makes no allusion whatever to inherited syphilis as a possible cause of suppurative inflammation of the middle ear. Dr. Albert H. Buck does not even mention, under this head, inherited syphilis in his book on "Diagnosis and Treatment of Ear Diseases." Keyes, Woods' library edition, refers to a middle-ear affection from primary syphilis, but makes no reference to middle-ear affections from the inherited affection. Dr. St. John Roosa does not refer to it. Dr. Thomas Barr, in an indefinite way, says: "As in nearly all the diseases of the ear hereditary tendency plays an important part in the causation." There is, however, no specification as to the character of the hereditary tendency. Diday says: "Cases of suppurative otitis are also seen associated with this type of disease, but it is open to some doubt if it is dependent directly on syphilis." Sturgis, in his American edition, says: "The lesions of the ear are even yet but little understood, and are nearly all confined to deafness which comes on suddenly and are frequently unaffected by treatment." Sir W. B. Dalby ignores the influence of inherited syphilis in middle-ear affections. In Ziemssen's Cyclopedia, however, occurs the following: "This is the starting point of catarrh of the tympanum, and a frequent source of deafness and tinnitus aurum. . . . These conditions are especially apt to occur in consequence of inherited syphilis."

A general comparison was made with the cornea and the membrana tympani, and special attention drawn to the universally recognized relation of inherited syphilis and interstitial kera-

titis, and the claim made on theoretical grounds that the tissues of the membrana tympani might be expected to suffer correspondingly with the cornea.

A comparison was also made with mucous membrane of the nose and that of the middle ear; and the peculiar symptoms given by Trosseau as characteristic of inherited syphilis, as it manifests itself in the mucous membrane of the nose, were supposed to find their counterpart in the ear.

Reference was made to the relative mildness of the secondary and tertiary manifestations of syphilis, and it was supposed that suppurative discharge from the middle ear should be less frequent in the negro if the influence of hereditary syphilis played an important part in the white races.

The practical observation of the author could furnish cases, but the reports were not given on the supposition that the question being fairly presented to the profession, nothing but their own observation could produce the conviction necessary for daily practice.

The author concluded by stating that his general practice in determining the presumptive course of a case of suppurative inflammation of the middle ear is to cleanse thoroughly the affected organ and note the appearance of the tissues, to inspect the nasal and pharyngeal spaces, the teeth, the scalp, the cervical glands, and if the cervical glands are enlarged, the teeth irregular and decayed; if the features are puny and shriveled, the hair thin and dry, pustules in the scalp, hypersecretion with swollen mucous membrane in the nose and a special predisposition to disturbance of the alimentary canal, if he does not conclude that the patient is the subject of inherited syphilis, he does conclude that he will thrive better, and the suppurative middle ear will heal more effectually by the use of what are known as anti-syphilitic remedies.

A paper was read by Dr. J. Baratoux, of Paris, France, on

CHANGES IN THE INTERNAL EAR IN HEREDITARY SYPHILIS.

During the last few years much attention has been paid to the changes developed in the internal ear in syphilis. It has thus been recognized that the walls of the vestibule, the semicircular canals, the lamina spiralis, and the cochlea may be affected with periostitis; that the soft parts of the labyrinth become implicated with round cells; that the auditory nerve has been greatly modified in structure, and finally, that the membranes of the internal ear have been injected and bathed in a sero-sanguinolent fluid which had taken the place of the lymph. He said, I have myself, in a work on syphilis of the ear, called attention to the inflammation of the vascular loops of the external walls of the canal of corti on a level with the spiral angle and of those which run along the vasilar membrane. I have also demonstrated on several preparations a dilatation and even a rupture of the walls of the vessels.

But among the new-born, afflicted with hereditary syphilis, the changes in the internal ear have been but little studied. As a fact Hutchinson attributes the associated deafness in such cases to a lesion of nervous origin. Lancereaux and St. John Roosa hold the same opinion. Wreden refers the lesion to a gummous degeneration of the auditory nerve. Hinton, however, demonstrated congestion of the vestibule.

In a series of autopsies, partly made at the Hospice des Enfants-arnistes, and partly in the obstetric department of the Hospital Cochin and St. Louis in Paris, I have found on different occasions that the internal ear was the seat of important primitive lesions, or arising secondary from lesions of the middle ear.

Among the numerous autopsies which I have made I present only the report of forty-three cases. All these forty-three cases were affected with hereditary syphilis, demonstrated either by lesions on different parts of the body, or by lesions on the parents, which lesions had manifested themselves in the year previous to the birth of the child.

Thus there was demonstrated twenty-seven true lesions of the middle ear, four times lesions of the labyrinth, and twelve times lesions of both parts.

The object of the communication is to call attention to the changes in the internal ear.

When the internal ear was affected simultaneously with the middle ear, without pus being found in the labyrinth, the walls of the ampullæ and cochlea were reddened; the axis of the cochlea injected and infiltrated with round cells, and the parts bathed in a sero-sanguinolent fluid which had taken the place of the lymph. When the internal ear alone was affected, the blood vessels were found to be dilated, the walls thickened, and in some instances hæmorrhagic spots were found. Demonstrations of these conditions were made to the physicians associated with the hospitals whence the cases were taken.

DISCUSSION.

Professor G. E. Frothingham, of Ann Arbor, Michigan, thinks the papers of Drs. Tilley and Baratoux are valuable productions, since they deal with a subject hardly if at all, discussed in the works on aural affections. To cite his own custom, for example, inquiry as to hereditary

syphilis in ear diseases did not receive the attention it deserves from otologists. While acquired syphilis is duly considered, the pains of investigating the possible influence of hereditary syphilis in the etiology and progress of certain aural affections, are seldom taken. Of course, when other well-marked symptoms of inherited taint are present, they are generally weighed, and the case is treated on the general principle that any constitutional disease should be cured, if possible, as a means of combating any local expression. It is not his custom, however, to attempt any special inquiry in this direction, and he does not think many others do. He readily conceives that inherited taint might give no other manifestation than, perhaps, general debility, which might be attributed to other causes. Happily, the custom of giving tonics, and alteratives as well, in the treatment of aural affections, compensated, somewhat, for this neglect, since cod-liver oil and the iodides, administered for other reasons, answered the best purpose in such inherited disease when conjoined with proper out-door exercise, bathing, cutaneous friction, and nutritious food—elements which entered into the therapeutics of most such cases. Dr. Baratoux is entitled to the thanks of the profession for his careful researches in this field; and Dr. Tilley, as well, for calling attention to the subject. He thinks it will be wise to give heed to the facts they have presented, and to remember them in examinations and the treatment of ear affections.

SECTION ON DERMATOLOGY AND SYPHILOGRAPHY.

Third Day.

LUPUS ERYTHEMATOSUS.

The session opened with a paper on the above subject by Dr. A. Ravogli, of Cincinnati, Ohio, In his opening remarks the author said that he would always prefer to treat lupus vulgaris than lupus erythematosus, so difficult was it to obtain satisfactory results. Kaposi had regarded the condition as a neoplasm. Hebra first described it as a seborrhœa, but modified the term by adding to it *congestiva*. All authors mention erythema and congestion as important features. Specimens were exhibited, which showed enlargement of the epithelial cells and hypertrophy of the papillæ in the stroma of the corium, and an infiltration of inflammatory cells in the meshes of the tissues, and some cells are seen between the fibers of connective tissue surrounding the hair-follicles. There is an increase in the number of connective-tissue corpuscles. The elastic fibers are swollen and enlarged, and the loculi, formed by the fibers of connective tissue, contain fluid. The blood-vessels are filled with blood. The condition is then one, not of neoplasm, but is an inflammatory process. Each layer of the skin is affected. After a patch of lupus erythematosus has disappeared there is left a thin, white, parchment-like condition of the skin resembling a scar.

There is a true atrophy of the skin, caused by pressure producing obliteration of the glands which first take part in the hypertrophy. The process is then first an hypertrophy of the histological elements, followed by an atrophy.

The cause of the atrophy is found in the blood-vessels being closed and obliterated by pressure. The primary cause consists in an irritation and stimulation of the nerves, which increases the blood-supply and causes a disturbance in the biological activity of the cells.

The author has examined scales from three cases of lupus erythematosus. The epidermic cells were found enormously enlarged, and contained a large number of round bodies which he regarded as micrococci. They formed groups and colonies, and chemical tests appeared to confirm the opinion that they were such.

Sections of the skin were made and showed the existence of the cocci in the papillary layer, most abundant where exudation has taken place, and small colonies in the interior of the fibers and in the capillary blood-vessels.

These bodies answered to the test laid down by Friedländer for micro-organisms, and Dr. Ravogli does not doubt that micro-organisms exist in lupus erythematosus, not only upon the surface, but also within the structure of the skin. He has been unable to make any culture experiments. He regards these organisms as the cause of the disease, and instead of classing it as a neoplasm, thinks it should find its place among the infectious diseases.

The inflammatory symptoms and hypertrophy are explained by the irritation of the micrococci. The function of the sebaceous glands is increased by the irritation, hence the seborrhœa and the formation of the greasy scales. This explains lupus erythematosus discroides; in the form called aggregatus the micrococci still better explain the condition.

As regards treatment, internal remedies are useless, as a rule. The application of emplastrum hydrargyrum has been considered the best treatment. The benefit of this powerful microbe destroyer strengthens the theory. When the skin is destroyed with caustics we succeed in destroying the cocci. When the sharp spoon was used to scrape the patches, or they were burned, the dis-

ease often returned in the neighborhood of the patch. Dr. Ravogli has obtained complete recovery in three cases of the disease by the use of ichthyol. Diminution in the secretion of the sebaceous glands is soon noticed. The reducing action of this agent is displayed on the underlying tissues. Ung. diachyl. hebræ goes well with ichthyol (ten per cent.), producing elevation of the epidermis and suppuration. The ichthyol is diminished to three per centum, and only slight scars result. He finishes treatment with ichthyol in collodion. Dr. Ravogli showed microscopic specimens to illustrate the pathological changes and the bodies which he regarded as cocci.

In the discussion, Dr. Knaggs, of England, asked if the reader considered the micrococci as causative, and whether the ichthyol destroyed them and the tissues, too, or acted as an antiseptic.

Dr. Ravogli replied in the affirmative. The ichthyol acted, he thought, by abstracting oxygen, upon which the life of the cocci depended.

Dr. Unna, of Hamburg, Germany, regarded the most important part of the paper that relating to micro-organisms, and he considered it the weak point as well. The cocci must be seen in all parts of the thickness of the skin, and, he believed, in the sweat-glands, too. He thought micro-organisms probably existed in the disease, and would some day be discovered, but he could not regard the specimens presented as showing them, and hoped Dr. Ravogli would continue his investigations and make cultures. He asked if the sections were made deep enough to show the sweat-glands.

Dr. Ravogli said he had not paid special attention to these glands.

Dr. Unna was glad to hear of the good influence of ichthyol, never having used it alone in this disease, but with the addition of salicylic acid. He has found resorcin beneficial and most useful as a varnish or collodion dressing.

Dr. Thin, of London, England, said that the refractive particles seen under the microscope might be micro-organisms, and might be other bodies. More characteristic stainings would be necessary and sections carried into the deeper parts, showing the same bodies before they could be regarded as micro-organisms. Furthermore, cultures and inoculations would be necessary to prove the case. Dr. Thin spoke of several rare cases he had recently seen in England, which, from their peculiar appearance, had been given the name of the cock's-comb disease, as similar cases had not been observed there. The feature of the affection was a raised, bright-red, uneven surface, with abrupt margins. He had examined specimens of the tissue, and had found it identical with that of lupus erythematosus. There was a greater degree of vascularity than usual, the epidermis was raised, and a dense mass of small cells was found between the rete mucosum and strata lucidum. The affection was found very unsatisfactory as regarded treatment. He related one case of lupus erythematosus in which an inexplicable spontaneous cure had taken place while the patient was upon an exclusive milk diet prescribed for another disease. He believed in a micro-organism, but thought it had not yet been found.

Dr. Klotz was glad to hear Dr. Ravogli say he avoided stronger and caustic remedies. He preferred salicylic acid combined with soap-plaster. He thought the discovery of micro-organisms would bring lupus erythematosus into closer relationship with lupus vulgaris, from which it had been too far alienated.

Dr. J. Zeisler, of Chicago, Illinois, thought the micro-organism theory a very plausible one; still, it was only a theory. To prove them it would be necessary to make cultures and inoculations. He did not regard the studies in this direction as entirely new, as Morrison, of Baltimore, had made similar investigations. Lupus erythematosus of the mucous membrane is an extremely rare condition. He had observed it in Vienna, in a case in which the mucous membrane of the mouth was affected. It presented a whitish condition of the membrane, the tissues were hardened, and it proved very obstinate under treatment. Caustic nitrate of silver was alone found to influence the condition. He agreed with Dr. Unna as to the value of resorcin, and that ichthyol had little effect. A ten per centum solution of resorcin in collodion had acted well.

Professor Robinson, the president, spoke especially in regard to the microscopic specimens. He agreed with Thin and Unna that in all probability a micro-organism exists, but he does not think that Dr. Ravogli has pursued proper methods, nor do the specimens show the bodies to be cocci. It is not clear that they are not extraneous matter. We must exercise great care in placing importance upon micro-organisms found upon the surface. He urged Dr. Ravogli to follow up his investigations and thought something might come of it.

In closing, Dr. Ravogli said that he labored under difficulties in making his demonstrations at this time. He considered the test with caustic potash a convincing one, as it never attacked micro-organisms, but did attack everything else. He was glad to hear the opinions of so many that micro-organisms probably existed. He would not say positively at the present time that they

were causative, but would wait until he had been able to make cultures, etc., as suggested.

A paper on

ERYTHEMATOUS LUPUS OF THE HANDS,

was read by Dr. Ohmann-Dumesnil, of St. Louis, Missouri, in which he says, few cases of erythematous lupus of the hands have been observed or accurately described. Existing upon the hands alone the disease is extremely rare. Treatment is sought usually on account of the appearance. He related the history of a case in which the lesions appeared upon the hands alone, had existed for a long time, and had been treated by caustic applications without much benefit. He employed concentrated lactic acid in the form of a paste, which produced severe pain, and was followed by a slough; pyrogallic acid was alone used, but the case passed from observation before a cure was effected. The author has collected forty-five cases. In twelve the disease began in the face, the hands being subsequently affected. The lesions do not extend beyond the nails and the dorsal surface is the seat of predilection. The patients were usually in good health. Dr. Dumesnil had endeavored to find cocci in the scales and sections of lupus erythematosus, but had not been successful. There is at first an inflammation of the epithelial layer, which subsequently dips down into the hair follicles, following and affecting the epithelial structures, and only extends to the dermic structures by contact.

A paper entitled

A CONTRIBUTION TO THE KNOWLEDGE OF IMPETIGO HERPETIFORMIS (HEBRA).

was presented by Dr. Josef Zeisler, of Chicago, Illinois. He first gave a short historical review of the literature of the subject, and paid especial attention to the work of Duhring, who, as he thought, went too far in including a disease like impetigo herpetiformis, so sharply characterized by its clinical course, the unmistakable efflorescences,the almost exclusive occurrence in women, in connection with the puerperium, the fatal end, etc, with other diseases under one name, that are so entirely different and mostly of a benign character. He referred to a recent paper of Kaposi, who, in describing the disease, again warns against confusion in studying a question which needs so very much to be cleared up. The author then furnished an exhaustive description of a case of this rather rare affection.

In the discussion which followed, Dr. Unna related a case which resembled both impetigo herpetiformis and dermatitis herpetiformis, but differed from both and was probably neither. It was similar, as regarded treatment, in that iodine in abundance was the only treatment which gave good results.

It resembled more an impetigo, because the blebs appearing did not from the first contain pus, as is necessary to establish the diagnosis.

SECTION ON CLIMATOLOGY AND DEMOGRAPHY.

THIRD DAY.

Dr. A. Tucker Wise, of Engadine, Switzerland, presented a paper on

THE CLIMATE OF THE SWISS ALPS, WITH PULMONARY CASES TREATED AT AN ALTITUDE OF SIX THOUSAND FEET.

The marked peculiarities of Alpine winter climate may be enumerated as, dryness of the air and freedom from micro-organisms, mechanical irritants, and noxious gases, low temperature, plenty of sunlight, low pressure, and ozoniferous atmosphere. The results of these peculiarities upon pulmonary complaints may be stated thus:

1. By breathing aseptic air free from dust, irritation, or, perhaps, recurrence of infection by microbes in the respiratory tract is greatly lessened.

2. Vaporization of morbid secretions in the lungs takes place, promoted by reduced barometric pressure and dryness.

3. Increased oxidation of blood and tissue from sunlight, cold air, and reduced pressure.

4. Increased quantity of blood circulating in the lungs, the freedom of the circulation being aided by extended chest movements.

5. Increased activity in the pulmonary lymphatics, and a general improvement in nutrition and glandular secretion; also an exhilarating effect upon the nervous system.

The four principal health resorts of the Grisons, in Switzerland, are Maloja, Wiesen, Davos, and St. Moritz. The climates of these resorts are stimulating and tonic.

Twenty-three cases are related, showing great improvement during a residence of from one to sixteen months.

A paper by Dr. John D. McDonald, F.R.S., Inspector General Royal Navy of Great Britain, on

GROUND-AIR IN ITS HYGIENIC RELATIONS,

pointed out the importance of the study of the atmosphere of the soil, but contained no especially new points of view.

Dr. P. H. Boyce, of Toronto, Canada, Secretary of the Provincial Board of Health of Ontario, read a paper upon

HOUSE ATMOSPHERES, OR ARTIFICIAL CLIMATES.

The points considered were the constituents of house atmospheres, their temperature and humidity, and air currents; the effects of house atmospheres on populations, and remedies for existing evils connected with house atmospheres.

With reference to the constituents of house atmospheres, the observations of Miquel, Koch, Aitken, and Tyndall upon indoor and outdoor air were quoted. Considerable attention was given to temperature and humidity in connection with house air.

The remedies for the evils mentioned are sunlight in abundance, greater care in the construction of dwellings, foundations, and plumbing appliances, improved municipal sanitation, and the attainment of equable heating and thorough ventilation. In conclusion, it must be recognized, regarding the fatal effects of the imperfect conditions of human life under which Indians, negroes, and many of the people of limited means exist, demand the earnest consideration of all workers in the field of climatology and demography; and since the occupations, urban residence, and limited means make it impossible for an increasing proportion of our population to enjoy the health-giving influences of rural residence and the stimulating effects of life by the ever-restless ocean, or upon the mountain side, we shall best conceive the duties assigned to us, of making it possible for every willing citizen to so live under his own roof as to maintain a vigor unimpaired for the discharge of the work lying nearest him, and to transmit to the race that is to be a legacy of physical health.

SECTION ON DENTAL AND ORAL SURGERY.

THIRD DAY—MORNING SESSION.

Dr. Pradère, of Lyons, France, read a paper on

PHTHISIS CURED BY THE CONTINUOUS APPLICATION OF MEDICINE TO THE PALATE.

Immediately after the paper was read, Dr. James Trueman, of Philadelphia, Pennsylvania, moved that it should not be accepted by the section, but should be referred, without discussion, to Section I., in General Medicine.

A number of gentlemen gave clinics in the treatment of diseased conditions of the oral cavities, and others demonstrated their methods of filling teeth and constructing artificial dentures for patients. These clinics are spoken of as a successful feature of this section.

Dr. Metnitz, of Vienna, Austria, read a paper on

OSTEOMYELITIS.

which consisted chiefly of a report of two cases from practice.

The history of the first case was as follows: In October, 1886, a lady, aged forty-three, had two teeth extracted. A few days later she suffered with chills, which were followed by slight mental disturbances. The seventh day the patient became unconscious, in which condition she was brought to the hospital. Examination revealed that there was a large swelling over the left cheek, extending to the temporal region; the skin covering this swelling was tense and pale in color; the sclerotic was highly colored (yellow), and the skin showed yellow tinge; the pupils were without reaction. The odor of the breath gave evidence of necrosis. The submaxillary glands were very much enlarged, and the neighboring tissues infiltrated. There was unconscious urination and defecation. Death occurred the following day. The post-mortem examination showed the membranes of the brain to be thickened and traversed by numerous vessels. The left hemisphere was covered by a layer of pus, and the right hemisphere showed considerable pus along the track of the vessels as well as several pus-depots. The brain-substance was quite soft. The examination of the oral cavity disclosed that of the two teeth extracted the upper alveolus had almost entirely filled up with healthy granulations, whereas the lower was filled with pus. The mucous membrane in the region of this diseased alveolus was very much discolored and could easily be removed in pieces. The probe discovered nothing but dead bone. All the muscles of the neck which are attached to the left side of the lower jaw were infiltrated with pus. The periosteum was separated from the left side of body and ramus of the jaw. The alveolus of the extracted wisdom-tooth communicated by two good-sized openings with the marrow-cavity, and the marrow itself was discolored and infiltrated with fat. The cause of this extensive destructive action is no doubt to be looked for in the unclean condition of the alveolus after the extraction. Sections of the jaw show that the medullary canal was very much enlarged.

Kocher, Rosenbach, and Busch, in experimenting on animals, have found that it is impossible to produce an acute pus-forming osteomyelitis either through traumatic injury or chemical and mechanical irritation, but that such a condition can readily be brought about by infecting the fresh wound in the bone by any decaying substance.

The second case was one of multiple osteomyelitis. The patient, male, aged seventeen, suffered from an attack of osteomyelitis of the humerus, the ulna, and the lower jaw. According to Billroth, it is not settled whether this condition (multiple osteomyelitis) is due to septic in-

fluences acting on various places at the same time, or whether the infection dates from one point.

Death in this case, as in the first, was directly due to acute suppurative meningitis. When we have to deal with a simple inflammation, energetic antiseptic treatment will prove quite sufficient. In severer cases of osteomyelitis Billroth advises that the seat of disease be reached as soon as possible—the pus evacuated, the cavity thoroughly disinfected, and dressed with antiseptic dressing. Many cases present no actual deposits of pus, or abscesses, but simply an infiltration of the marrow. In such cases Billroth holds it of little value to open into the medullary canal. Neither does he advocate disarticulation or resection, because, in the first place, the exact extent of the disease cannot be foretold, and, secondly, the medullary substance of a patient suffering from osteomyelitis is in such a susceptible condition that a new injury would almost certainly prove fatal.

Dr. Jenison, of Minneapolis, Minnesota, read a paper on

ART IN DENTISTRY.

The essayist advocated the restoration in gold of all teeth that had been destroyed by caries, thereby improving both their usefulness and beauty.

In constructing artificial dentures more time should be given to the restoration of the features of the patient, and for that purpose single and not section teeth should be used.

THIRD DAY—AFTERNOON SESSION.

Dr. R. R. Andrews, of Cambridge, Massachusetts, read a paper on

THE ORIGIN OF THE DENTAL FIBRIL, ILLUSTRATED BY AID OF STEREOPTICON.

Dr. Andrews described his process of preparing and mounting the specimens for the microscope, which differed in no essential respect from the latest methods employed by others for that purpose.

In speaking of the formation of the fibrils, the essayist says there are two kinds of odontoblasts —those which are square toward the dentine, and others, just by the sides of the first mentioned, which are pear-shaped. From these latter, and not from the first (or square end ones), originate the dental fibril.

The stereopticon views presented showed very clearly with what patience, earnestness and intelligence the essayist worked to establish his view of the question.

Dr. Frank Abbott, of New York, N. Y., in opening the discussion, paid a high tribute to the reader of the paper for the hard work done in behalf of his specialty. In order to understand the process by which the dental fibril is produced, it is necessary for us to consider the matter from the third to the fifth month of intra-uterine life, at which period of the existence of the fœtus the papilla of teeth are so far developed that a material change is observed to be taking place. The papilla is a mass of myxomytous tissue, liberally supplied with medullary elements. In some instances at three months, at others as late as the fifth of intra-uterine life, a coalescing of several of the medullary corpuscles into one may be observed upon the periphery of the papilla adjacent to the enamel organ, which at this period may be observed forming a cap upon the papilla. The united medullary corpuscles are known as odontoblasts. The impression has generally prevailed among histologists and embryologists, that the odontoblasts were directly formed into dentine. This theory, through recent researches, has been proven to be incorrect. The odontoblasts, when viewed with a power of 1,200, show a delicate reticulum, which unites the nuclei with the walls of each corpuscle and with each other. This reticulum, as well as the walls of the odontoblasts, are the living matter which remains as the living portion of the dentine. Before the beginning of the deposition of lime salts, the odontoblasts are reconverted into medullary substance. As such they receive the calcareous basis-substance, and thus a certain territory of the papilla becomes dentine. While this process of calcification is going on, another row of odontoblasts makes its appearance, from the sides and ends of which prolongations of the living matter may be seen running into the canaliculi of the dentine already formed. A spindle or pear-shaped odontoblast, gives off one, while those with broad ends give off two, three, and even five prolongations. If the views advanced in the paper were correct, it would necessarily follow that territories of considerable size would be left in the dentine with no canaliculi whatever; nor is there any provision for furnishing these territories with any living tissue.

Dr. Fletcher, of Cincinnati, Ohio, read a paper on

PROTECTIVE DENTINE; ILLUSTRATED BY STEREOPTICON.

This paper, from its practical aspect, was of special interest to the section. The slides which were thrown on the screen showed the different kinds of protective dentine, and the essayist gave his views of how these different efforts

on the part of nature to protect herself are brought about.

Dr. W. X. Suttuth, of Philadelphia, Pennsylvania, agreed with the essayist in the practical conclusions drawn; he supplemented the reader's remarks by stating that the odontoblasts remain after the development of the dentine, but can be stimulated to produce or perform their function of forming protective dentine.

Dr. J. Howard Mummery, of London, England, exhibited

PHOTO-MICROGRAPHS OF ALL THE STRUCTURES OF THE TOOTH,

and explained the best method of producing them.

SECTION ON GYNÆCOLOGY.

THIRD DAY—MORNING SESSION.

Dr. Ernest W. Cushing, of Boston, Massachusetts, read a paper entitled

CANCEROUS DEGENERATION OF THE HYPERPLASTIC GLANDS OF THE CERVIX UTERI.

Ruge and Veit have described a condition of the glands which they considered to be in itself the nature of a cancer—a transition from innocent to malignant formation. This seems to me much less clearly demonstrable than the views which they maintain concerning erosion.

Briefly, they attribute the greater import to a certain filling up of the lamina of the glands with epithelial cells, either columnar or flat. The theory of Veit and Ruge agrees so thoroughly with Theirsch and Waldeyer and their followers that it has been very widely accepted, and a plate showing the transition is shown in Dr. A. Martin's "Gynæcology." It is possible that greater importance has been attached to this condition of glands than has been warranted.

The question is of practical importance in regard to the microscopical diagnosis of suspicious affection of the cervix, for as it is admitted that the diagnosis cannot be made securely by the unaided eye nor by the touch, and as vaginal hysterectomy is now advocated, and, at any rate, free amputation of the portio vaginalis is indicated in all cases of undoubted cancer, even in an incipient stage, a great responsibility attaches to the microscopic examination.

In the first place, as Ruge and Veit expressly declare, in their majority of cases the carcinoma did not originate in the new-formed gland, but infiltrated the cervix as a "carcino-sarcoma," an aggregation of small cells lying in masses in alveoli of connective tissue. In such cases there was no evident connection with the epithelium of the surface with the glands.

In four out of twenty-two beginning cancers of the cervix, however, they found appearances of solidification of the glands and filling up with epithelium, which they describe and figure as a transitional stage in the development of the adjacent cancer. With much diffidence I venture to suggest that my studies of the changes in question have led me to different conclusions from these observers.

THE PLATES OF RUGE AND VEIT.

are not conclusive on this point.

Even when a whole series of glands lying adjacent to each other show occluded lumina on section, I cannot feel that the diagnosis of carcinoma is justified, but only that of adenoma. It may become destructive, but is not carcinomatous until changes occur in the connective tissue between the glands, when the boundaries of the glands are broken through by the growing cells.

Even when the new glands are thus involved manifestly in the carcinomatous growth, it has seemed to me they are invaded from without by the growth of cells in the surrounding tissue. . . . I have found no evidence that after filling up the lumen of a gland the proliferating columnar epithelium changes to the flat variety, and, breaking through the boundary of the gland, invades the surrounding tissue.

Moreover, in attributing so much importance to the fact that they found the lumina of some of the new glands occluded, Ruge and Veit have not noticed the explanation that precisely these solid acini or branches may be the first stage of their existence previous to the formation of the lumen.

Such a mode of growth is seen in the formation of new glands in the walls of a multilocular cystoma of the ovary. These little solid sprouts, lined with columnar epithelium, afterward become hollow and then dilate, forming cysts.

A similar mode of growth is seen in the female breast when rapidly enlarging, preparatory to the secretion of milk.

Where the microscope shows glandular degeneration, the surface bare of epithelium, the tissues heavily infiltrated with small cells, especially if the woman be fifty or over, we should not say that the microscope only shows chronic inflammation, but that

WHILE CANCER IS NOT PROVED, IT IS NOT EXCLUDED.

and should recommend a free removal or destruction of the suspected tissue.

Shall we, then, say that a case is not cancerous which shows no distinct structure of carcinoma on microscope section, only a glandular hyper-

trophy, with some of the glands filled with the epithelia and the stroma infiltrated with small cells, the surface denuded of its epithelial cells and irregular?

May we not reconcile the long contest between the two theories, which assign the origin of cancer respectively to the connective tissue and to the epithelial layer of the glands of the involved organ by supposing that the anatomical arrangement of cells, which clinically and microscopically we call cancer, is only the visible and outward sign of a morbific agent at present hidden from us?

The practical deductions which depend upon our speculative opinions as to the nature of cancer are of the greatest importance.

In the first place, if the disease comes from within, if it is a perverted growth of a part of the tissues, dependent on some original error of development, it is necessarily absurd to try to find, empirically, any medicine which should cure it.

If, however, it is an infection of some kind from without, we are justified in trying empirically, if as yet vainly, for some remedy which may overcome it.

Of more practical importance is the question of the utility of cauterizating the stump or cavity from which a cancer has been removed. There is considerable evidence which shows that surgical interference with a cancer is sometimes followed by a recrudescence of the disease more rapid and violent than the original disorder. If we consider that the operation opens veins and lymphatics which sometimes become infected with the morbific agent, we can better understand why a thorough cauterzation of the tissues left bare by the removal of a cancer of the cervix should be apparently so useful in lessening the chances of a return of the disease.

Dr. Franklin H. Martin, of Chicago, Illinois, read a paper with the title

A METHOD OF TREATMENT OF FIBROID TUMORS OF THE UTERUS BY STRONGER CURRENTS OF ELECTRICITY BASED UPON EXACT DOSAGE.

The author recognized in the treatment adopted by Dr. Apostoli a rational, harmless, comparatively painless and eminently successful mode of treating fibroid tumors of the uterus by electricity. It is upon these well-tried principles that Dr. Martin is able, after successful practical experiments, to lay down an exact line of dosage, enabling him to obtain all the beneficial effects of electricity without overstepping the limits of tolerance in the most susceptible or sensitive subjects.

The distinctively original feature of the paper was the description by Dr. Martin of his method of exact calculation of dosage, experiments being cited which showed that a certain local effect may be expected that an active electrode of a given surface from a definite strength of current passing for a certain length of time. The demonstrations proved that in order to get the characteristic local effects of electricity on the mucous membrane of the uterus, or to check hæmorrhage, upon a surface of one square centimetre, a current of twenty-five milliampéres passing for five minutes is necessary. One square centimetre is found to be about the surface represented in length of the uterine sound electrode. Upon this basis of calculation, the uterine canal which would require an Apostoli electrode twenty centimetres in length would require a current, if equal conduction took place from its entire surface, of five hundred milliampéres. The author argued that in many cases this strength of current would not be tolerated, and if it were there is no means of being certain that the sound conducts equally from so large a surface or that it comes in actual contact with the mucous membrane of the uterus in its entire extent.

In order to obviate this difficulty Dr. Martin has employed electrodes, concentrating the current to smaller portions of the uterine canal, so constructed that each portion of the canal may be treated by each succeeding operation.

HE RECOGNIZES BUT TWO VARIETIES OF OPERATIONS.

1. Positive inter-uterine galvanism, which corresponds to Apostoli's "positive galvano-caustique."

2. Negative inter-uterine galvanism, which corresponds to Apostoli's "galvano-caustique negative." These operations were fully described, from which procedures Dr. Martin believes we have a safe, painless, accurate, and rational method of treating fibroid tumors of the uterus. By this method all danger to the patient is avoided, such as may be observed in other treatments.

In conclusion, the principal advantages of this method were summarized under six headings: (1) It is entirely free from danger; (2) it is absolutely painless; (3) it invariably checks hemorrhage; (4) it rapidly reduces the size of tumors (5) it alleviates the neuralgic pain; (6) it is a system of treatment of fibroid tumors of the uterus based upon principles which make exact dosage possible.

Dr. Thomas Moore-Madden, of Dublin, Ireland, then read a paper entitled

SOME POINTS IN THE PATHOLOGY AND TREATMENT OF LACERATIONS OF THE CERVIX UTERI.

The pathology and treatment of lacerations of the neck of the uterus have received an amount of attention, in America and elsewhere, which would appear exaggerated were it measured by the comparatively scanty attention as yet accorded in Great Britain. When I read a paper on Emmet's operation at the closing meeting of the Dublin Obstetrical Society, the very name of that operation, or the circumstances calling for trachelorrhaphy had never been alluded to in the transactions of the association of British obstetricians and gynecologists.

In neither English nor American literature have I found sufficient recognition of the frequent complications, pure and immediate, arising from cervical lacerations in obstetric practice: viz., the causation of one of the most troublesome forms of post partum hæmorrhage; and secondly, the occasional occurrence of puerperal septicæmia, as the direct result of lacerations of the cervix uteri. So far as he was aware, the advantages of amputation of the mutilated and hypertrophied cervix, in many cases of extensive stellate and bilateral lacerations, over trachelorrhaphy were not generally recognized.

THE RACIAL AND CLIMATIC CONDITIONS.

are not so obviuosly different in London and Dublin from the same in New York and Boston, and any method of treatment found useful on our side of the Atlantic, should, *cæteris paribus*, have a like effect in similar cases here. I therefore venture to submit my clinical experience to the judgment of the ninth International Medical Congress, and more especially my American brethren therein. It is to them that we who practice in the narrower limits, and perhaps more conservative atmosphere, of the old country are mainly indebted for our present acquaintance with this department of modern gynecology. I am convinced by my clinical experience, which is now tolerably large, that it is a far better and more rational practice, if any operative treatment be really required, to resort to the amputation of the entire extent of the mutilated and diseased cervix by either ecraseur or galvano-cautery. I need not say I do not advise this operation indiscriminately; indeed, I think the majority of cases of cervical laceration need no operative treatment specially, and such an operation as the removal of the cervix is not to be undertaken without due caution and, above all, real necessity. When thus justified, however, the amputation of the cervix, despite the protestations of some eminent gynecologists, is as unquestionably legitimate as any operation in gynecological surgery. By this procedure, when successful, not only may the surgeon rapidly and effectually remove every trace of a morbid condition, which, if uncured, would probably entail a life of continual uterine discomfort. We may also with certainty prevent the otherwise not improbable possibility of the lacerated and hypertrophied parts becoming the seat of malignant disease at a future period.

A paper by Dr. Leopold Meyer, of Copenhagen, Denmark, was then read on

CONTRIBUTIONS TO THE PATHOLOGY OF INFLAMMATION OF THE LINING MEMBRANE OF THE UTERUS (ENDOMETRITIS CORPORIS CHR.)

1. (*a*) In cases of chronic endometritis, as a rule, we find two varieties of cells, or, rather, of nuclei (as the limits of each single cell are often not distinct), in the inter-glandular tissue. One variety has smaller nuclei; these average as large, or a little larger, than red blood-corpuscles, are stained brightly by hæmatoxylin, carmine, Bismarck-brown, and the substance of the nucleus rarely presents a granular condition.

The second variety has a great resemblance to the so-called decidua cell.

(*b*) This second variety of cells is not only found in cases where the woman has been pregnant, but are seen in the most developed forms in women whose virginity is unquestionable.

(*c*) This second variety of cells seems, as the first variety, to be derived from the cells normally found in the inter-glandular tissue of the lining membrane of the uterus, the decidua. Cells of the second variety are found in the normal lining membrane during menstruation.

(*d*) Besides these two kinds of cells, we find regular connective-tissue cells and white blood-corpuscles in the inter-glandular tissue.

2. In cases of chronic endometritis, the epithelium covering the lining membrane of the uterus can preserve its character of a low columnar epithelium. but it frequently changes character altogether.

Dr. Alfred C. Garrett, of Boston, Massachusetts, read a paper on

TUMORS OF THE BREAST TREATED BY ELECTROLYSIS.

Many, or most of the tumors that so frequently occur in the human breast, we find can be completely cured, if treated while young, or new—that is, while in the first stage of existence, by certain mild applications of electricity.

In the first place, to obtain uniform success by this method, we must plan to find these tumors as soon as possible after they form in the breast, while they are in a curable stage in the majority of cases.

However, we already know we cannot assume that

EVERY MORBID LUMP

that grows or appears in the human breast begins from the first a simple or non-malignant tumor, though the most of them seem to do so, judging from the uniformly successful results of these treatments by electricity when applied to the selected, new, or recent tumor.

It is determined that here we must choose the form of electricity and method of application as carefully as we seek to find the curable cases; for we are not to resort to the usual electro-puncture needles, knife, wire, nor any active destructive electrolysis, nor any other means that shall produce solution of continuity. We are to employ simply surface applications of certain graduated, galvanic, steady currents, through peculiar, large, soft, and moist electrodes, so adjusted close to each side of the tumor as to cause this gently chemical current to completely permeate, and wash through the whole mass from side to side in its deeper parts, mainly in directing toward the axilla, for about a half-hour at each séance. It is not enough to simply apply the two electrodes to the surface of the breast or in any manner. Moreover, we need to use a milliampére metre to measure the current that actually passes through the tumor and gland; also a key-board that can enable the operator to pick up and increase the current, cell by cell, to the tolerant and efficient strength, which will be from ten to fifty milliampéres. The current required for each individual case cannot be stated in exact terms, as it is found in practice there is a wide difference in the resistance, tolerance, and effect in different persons; yet this point is of great importance.

The result is, that out of 186 tumors treated since 1864, a record of them having been kept and looked after, 157 disappeared and remained well. Several others did not quite obliterate, however, but left a small nodule, of the size of a chestnut, which in every case disappeared or remained benign.

AFTERNOON SESSION.

Dr. W. H. Weeks, of Portland, Maine, read a paper on

MYOMA IN PREGNANCY.

He considered the question of operation in these cases to be still under discussion. He introduced the paper by the relation of a case—a young lady, pregnant, having a large uterine fibroid which nearly filled the uterine cavity. He was in favor of allowing the pregnancy to go to term, and such was the opinion of a Boston gynecologist to whom he sent her for counsel. A New York gynecologist, however, advised immediate delivery by the induction of premature delivery. The method by which he would do this was to inject hot water and deliver under ether pervias naturales. If allowed to go to time laparotomy would be necessary. Two Boston gynæcologists agreed with him, and the author was obliged to surrender. He carried out the instructions of his colleagues to the letter. The patient died in less than an hour after delivery. She seems to have died of hæmorrhage and shock. When, as in this case, pregnancy is complicated by a large interstitial uterine fibroid, occupying and well nigh filling the cavity of the pelvis, is it better to induce abortion or premature labor or to allow gestation to go on to full term, and then deliver by abdominal section?

GUIDED BY THE LIGHT OF ABDOMINAL SURGERY,

I shall maintain that in the vast majority of cases, as stated in the above question, it is better to allow pregnancy to go to term, and then, if it is found that delivery is impossible *per vias naturales*, to resort to abdominal section without waiting till the patient's strength is exhausted by protracted labor. The operation best suited to such a case is Cæsarean section, Sänger's method, and then the removal of the ovaries, and, if possible, the fallopian tubes. Would it not have been better in this cause to have allowed the patient to go on to natural labor, and then performed laparotomy before she was broken down?

The author had sent out a letter of inquiry to prominent gynæcologists of this country and abroad. Nine out of thirteen physicians were in favor of the induction of premature labor. This proportion he hoped would be reversed.

Professor Graily Hewett, of London, England, opened the discussion and commended the paper very highly.

IT IS A THANKLESS DUTY

to bring an unfortunate case before the congress, and Dr. Weeks should have our admiration for doing so. I think that it is generally admitted that rapid evacuation of the uterine cavity in labor is a mistake. The operation in this case seems to have been done rather rapidly. Whether this had anything to do with the hæmorrhage and shock I do not know.

Dr. Trenholme, of Montreal, Canada, had had three cases of labor complicated with fibroids, which he related in brief. In one of these premature labor was brought on by a sessile tumor in the base of the uterus. The temptaton to remove the tumor was great, and he did it, but the patient died. In his second case he found a small fibroid, which he left alone. The patient did well for some time, but had a return of the trouble. He believed evacuation of the uterine contents should take place slowly.

Dr. Lawrence of Bristol, England, discussed the question.

SHOULD A WOMAN SUFFERING FROM FIBROID TUMOR BE ALLOWED TO MARRY?

This is a question frequently presented to the physician and gynæcologist. If the patient is not suffering from symptomatic troubles you may tell her that she will probably never be pregnant, but if pregnant she may probably have hæmorrhage and may die of it. With this understanding, if she persists let her marry. He reported eight cases in brief. In one of these, after a large number of pregnancies, the tumor disappeared entirely.

Dr. S. C. Gordon, of Maine, said that the case of Dr. Weeks was originally his own, and he felt like saying something. He agreed with Dr. Weeks that no abortion should be induced in this case. In his opinion the position of the uterus in this particular case forbade the operation. The position of the tumor influences very largely our procedure. He reported an illustrative case. In a second case which he cited he advised the induction of abortion, because the tumor involved the anterior wall of the uterus as low down as the os.

Dr. Alexander Dunlap, of Springfield, Ohio read a paper on

THE EARLY HISTORY OF OVARIOTOMY IN AMERICA.

This was a resumé of the trials and opposition with which the early American ovariotomists met in prosecuting their work. The author's own work, which is known to have been of great importance, though little of it has been published, was described minutely.

Early in 1843, with a very limited knowledge of medicine and surgery, he came in contact with a very peculiar case of ovarian dropsy which he had been led to consider as incurable. This he tapped several times, with the usual results. He then went into the history of his first ovariotomy with all the enthusiasm of forty years ago. After much delay the patient succeeded in forcing him to perform the operation, much against his will. He invited ten of his medical friends to witness the operation. They declined, saying that they could see enough people die without seeing them killed. One of them presented himself at the time. He was an old retired army surgeon. With this assistant and four students he operated, first giving the patient a teaspoonful of laudanum, after which he went to work. The operation was minutely described. The patient was placed in bed after the operation, with no especial shock, having watched every movement made with care and interest. She did well for four days, when she had a severe diarrhœa which was brought under control. She did well for a time, when she was taken with an excessive excretion of urine and died on the twentieth day after the operation. There was no septicæmia. He was convinced that she did not die from the operation but from the tappings, which had deranged the system and were probably the cause of the kidneys acting as they did. It is probable that had he operated when she first wanted him to do so she would have been alive to-day.

Dr. Kimball, of Lowell, Massachusetts, was then asked by the president to give his experience in early ovariotomy in the East. His story was quite similar to that of Dr. Dunlap, and his opposition as great. This opposition, he must say, came mostly from the New England metropolis, Boston. Being asked for his first case, he said his first case was one in which he did not operate. He then reported the first case in which he did operate about thirty-five or forty years ago. He invited ten physicians. During the operation he met with considerable difficulty in the form of nine cysts, and when he looked about for his assistants they had all left but one.

Professor N. Bozeman, of New York, N. Y., reviewed the revival of the history of ovariotomy after its abandonment by McDowell, of Kentucky, and its condemnation by the profession. Dr. Miller was the first to use chloroform as an anæsthetic in ovariotomy in America. It was in Terre Haute, Indiana, and Professor Bozeman gave the chloroform. He gave Dr. Dunlap much credit for his work, and especially for what he had done in recognition of the importance of adhesions.

Professor A. Cordes, of Geneva, Switzerland, read a paper on the

MEDICAL TOPICAL TREATMENT OF UTERINE CANCER.

The paper was divided into a general consideration of the subject: medical and surgical treatment, the opinions and treatment of Hippocrates and Celsus; the obscurity of the pri-

mary symptoms; the impossibility of hysterectomy in certain cases; adherence and extension to other organs; statistics; topical applications; the treatment of advanced periods of cancer by turpentine, the properties of this remedy, its application and preparation by M. Betrix, assistant to the clinique. The paper closed with a series of conclusions at which the author had arrived.

A paper was read by Dr. A. Lapthorn Smith, of Montreal, Canada, on

A NEW THEORY AND TREATMENT OF DISPLACEMENTS OF THE UTERUS BY ELECTRICITY,

and one by Dr. Apostoli, of Paris, France, entitled

SOME NEW APPLICATIONS OF THE INDUCED OR FARADIC CURRENT TO GYNÆCOLOGY.

SECTION ON OBSTETRICS.

THIRD DAY—MORNING SESSION.

DISCUSSION ON CÆSAREAN SECTION.

Professor Alexander R. Simpson, of Edinburgh, Scotland, was in accord with the ideas expressed in Professor Lusk's paper, though he did not think the time had yet come when craniotomy could be entirely laid aside; its performance, however, should be restricted. In Edinburgh pelvic deformity was rare and craniotomy was rarely required.

The cases requiring abdominal section could be divided into two groups; first, those where the prognosis was rendered grave by pre-existing inflammatory conditions or sepsis, and, second, those favorable cases where we could choose the moment and place of operation, when we should nearly always succeed. At present he would be bold who would perform Cæsarean section by other than the Sänger method. Where the uterus was diseased and its removal would give the patient a chance, he would employ Porro's method.

Professor August Martin, of Berlin, Germany, considers the Sänger modification very important, and one which has rendered the operation safe. Since the adoption of this modification the section had been done in some cases where he thought version could have been safely performed. In moderate degrees of pelvic contraction we should ascertain whether delivery could not be effected in other ways, as by version, before performing the section. He had done the Cæsarean in pregnancy complicated with cervical myomata. Sänger had operated in similar cases. Where carcinomata of the organs in the pelvis endangered life we should endeavor to deliver the child and remove the growth at the same time. When the uterus was infected by septic material it should be removed. In a rachitic, kyphotic woman, with heart and lung-disease, the symptoms were so grave that he did not think the woman would stand normal parturition or the puerperal state; accordingly he had done abdominal section, saving both child and mother, but the latter finally died from her lung trouble. Much depended upon our knowledge of the technique; if we succeeded in doing the operation perfectly, either the Sänger or Porro operation was justified. The statistics of the Porro operation were rendered less favorable by Italian operations done on unfavorable subjects who were septic and in whom the operation was too long delayed. The Cæsarean section always gives us hope of perfect recovery, while the Porro operation prevents future maternity.

Abdominal section is indicated when it seems impossible to bring a living child through the pelvis (if care be taken not to operate too soon), when neoplasmata narrow the canal or endanger the progress of parturition; and when diseases are present in which the life of mother and child would be endangered by the process of parturition or the puerperium.

The Cæsarean section should be done when we have reason to believe that the patient can endure another pregnancy; the Porro operation, or total extirpation, when there is no hope of future maternity or where the disease, from its nature or seat, is probably fatal.

Dr. Joseph Taber Johnson, of Washington, D. C., reiterated the opinions expressed by Professors Lusk and Wathen. He believed that by delay and the attempt to perform other operations many lives were lost. He advocated the Porro operation when the uterus was septic or bruised. The wonderful results of foreign operators were due to their exceptional opportunities and skill, the operations being done by a few men, while here the operators were scattered, and many operations had been done in the backwoods.

Dr. Balls-Headley, of Melbourne, Australia advocated the Cæsarean section when the child, could not be born alive through the natural passages. There were also certain conditions, as carciuoma of the cervix, where other operative interference would allow the child to be born, but in these cases his experience taught him that the Cæsarean section offered a very much better prognosis. The operation was an easy one. In slight pelvic contraction the section gave good results. We should operate early, or, if the parts were bruised, substitute the Porro operation.

Dr. Doléris, of Paris, France, accorded with the views of Lusk and Martin. He believed in the use of the elastic ligature.

Professor W. W. Jaggard, of Chicago, Illinois, said, with reference to the *relative indication* for Cæsarean section, that in cases where the child could pass *per vias naturales*, when diminished in size, with safety to the mother, as, for example, in pelvic contractions of from 6 to 8 ctm. in the true conjugate, four considerations should receive attention:

I. Craniotomy does not require a higher degree of operative skill than every qualified obstetrician ought to possess, when proper instruments are employed, *e. g.*, Braun's curved trepan and cranioclast.

II. The mortality of craniotomy, when performed in time, and before exhaustion and infection of the woman, with adequate skill and antiseptic precaution, is, as remarked by Barnes, practically nil.

III. The consent of the woman, obtained without direct or indirect coercion, an essential condition of the relative indication, is seldom gained, if the facts be presented to her.

IV. That there is much sentimentalism with reference to the value of the life of the child in utero, as compared with the value of the life of the mother. This interest in the child is purely impersonal and scientific. The delight in saving the child's life is frequently that arising from the the success of a difficult scientific experiment.

Professor William T. Lusk, of New York, N. Y., said that the points made by Professor Jaggard were opposed to his recent investigation. With skill we could remove a living child where the contraction was only 7 to 10 ctm. Craniotomy was a dangerous operation, and, under three inches, required much skill and good instruments. He believed the Cæsarean section not more dangerous than the extraction of the child after craniotomy.

In his recent case the operation was done in the open ward, with the same preparations as for ordinary laparotomy. The children, according to his researches, did not die, as general opinion would have it. The Cæsarean section was easy to do. He thought there was danger, in the employment of the elastic ligature, from paralysis and inertia, caused by the compression. We did not want to encourage trying craniotomy and then Cæsarean section, but should make the latter the operation of election. Most of our cases had been done under circumstances which had rendered death inevitable.

AFTERNOON SESSION.

Dr. J. A. Doléris, of Paris, France, presented a paper on the

TREATMENT AND SURGICAL RESTORATION OF THE CERVIX DURING PREGNANCY.

He first described a case where at a previous pregnancy the cervix had been very extensively lacerated. The patient was again several months pregnant, and suffered from a profuse, fetid, probably gonorrhœal discharge. There was severe vaginal pain, and the cicatrix of the cervical laceration was very painful when touched. Preliminary treatment did not relieve the patient and the cervix was sewed, four sutures being placed on either side; the vagina was filled with iodoform gauze; the result was excellent. There was no interference with the pregnancy.

This was only one of several similar cases where he had operated successfully.

A severe laceration accompanied by profuse and fetid discharge was very distressing, and might lead to abortion or puerperal fever.

He thought the danger of producing abortion by the operation was exaggerated, and that in the class of cases mentioned it produced good results.

Dr. Opie, of Baltimore, Maryland, recalled a single case where a severe bilateral laceration of the cervix had been operated upon; the woman proved to be pregnant, and aborted on the sixth day. There was objection to any operation about these parts during pregnancy, especially early pregnancy. Cervical operations were not without their special dangers at this time, and should be but rarely done.

Professor Leischman, of England, said that preconceived opinions often stood in the way of new truths. His preconceived opinion was that operations about the cervix were likely to produce abortion, especially when not done by the most skilled hands. Any operation during pregnancy, and this in particular, should be done only in rare and strictly defined cases.

Dr. Doléris responded that he had not advised the operation except in the well-defined cases he had mentioned, and in which he thought it would rather tend to prevent abortion.

Dr. Joseph Kücher, of New York, N. Y., read a paper on

ON THE RELATION OF THE ATMOSPHERE TO PUERPERAL FEVER.

He spoke of the importance of pure air in the lying-in room, and put the question: What influence has an impure air on puerperal fever? A *résumé* of the literature and statistics of the subject shows that the malaise of dissecting-rooms

is more due to impure air than to absorption of septic material, and that true sepsis occurs only by inoculation through an open wound.

Overcrowding does not necessarily cause puerperal fever when septic infection is prevented. Pure air undoubtedly allows of more rapid convalescence; bad air depresses and allows the more easy access of septic infection; sepsis does not occur from bad air alone, but only from direct contact with septic matter.

Dr. Thomas More-Madden, of Dublin, Ireland, presented a paper

ON THE PREVENTION AND TREATMENT OF PUERPERAL SEPTICÆMIA,

which was read by the secretary.

The author considers all forms of septic fever consequent on parturition, and occurring within the puerperal period, as various manifestations of a specific puerperal fever. Puerperal sepsis may originate in three ways, viz., from inoculation with the micrococci of clinically allied diseases, such as erysipelas or scarlatina; from infection by the pathognomonic, chain-like microorganisms evolved by other puerperal fever patients; or the disease may arise from auto-infection with self-generated septic matter. Although absolute immunity from puerperal fever must be considered hopeless, its prevalence may be much diminished, and its virulence minimized, by the rigid observance of certain precautionary antiseptic and hygienic measures.

For prophylaxis the author strongly recommends the administration, during the latter months of pregnancy, of the chlorates of iron, potash and quinine. Strict attention to the patient's local and general hygienic and aseptic condition is insisted upon. The author uses a carbolized intra-uterine douche daily throughout the puerperium, together with large doses of ergot for the same time.

In the treatment of puerperal fever he relies primarily on the maintenance of the patient's strength by suitable nourishment and stimulants; secondly, on the daily washing out of the uterine cavity with hot water, plain or medicated; thirdly, on full doses of quinine and turpentine —which latter drug he believes to be especially valuable in every form of puerperal fever.

Professor Chas. Warrington Earle, of Chicago, Illinois, presented

A STUDY OF CERTAIN QUESTIONS IN CONNECTION WITH PUERPERAL FEVER, WITH PARTICULAR REFERENCE TO THE USE OF INTRA-UTERINE DOUCHE AND CURETTE.

After a discussion of various theories, he concluded that puerperal fever was in every instance produced by infection from without. There was no such thing as autogenetic infection. No one could now disbelieve the germ-theory. Experience had shown that it was impossible for decomposition to occur without the presence of bacteria. There were many ways and many forms of infection. In a larger number of cases than we could suspect, debris, bits of placenta, decidua, etc., were left in the uterine cavity, which were, in our present modes of practice, infected by patient, nurse or doctor.

The only rational treatment was to remove all decomposing material, and prevent a local poison from invading the entire system, and producing general sepsis.

Any marked rise of temperature in the puerperal woman should be investigated, and, if not plainly due to other causes, the genital tract should be suspected. A vaginal and uterine douche not reducing it, the uterus should be curetted, using a large, blunt instrument with all antiseptic precautions and great gentleness; the curetting to be followed by an intra-uterine douche to carry away all loosened shreds.

The author cited cases where the curetting had been done with the most gratifying results, and in no case did he know of any harm resulting from it. He did not wish to be understood as advocating the indiscriminate use of this measure, it being indicated only in those cases where the high temperature persisted after an intra-uterine douche, when it was extremely valuable.

Dr. R. Lowrey Sibbet, of Carlisle, Pennsylvania, read a paper on

THE PREVENTION OF PUERPERAL FEVER.

The contagium was always from without, and was never autogenetic. It was carried always by the medical attendant or nurse. Aseptic cleanliness on their part was the best prophylaxis. He had always kept a disinfectant on his washstand, and had never lost a case of puerperal fever. He did not believe in the intra-uterine douche in private practice; it was dangerous, and could not be trusted to an unskilled nurse.

Dr. Doléris, of Paris, France, thought that in practice we were ahead of theory. He used the douche and the curette, or the milder intra-uterine brush, in cases such as Professor Earle had indicated. He had used these measures with the very best success in many cases, from the second to as late as the seventeenth day.

Professor W. W. Jaggard, of Chicago, Illinois, would treat the uterus when mild infection had already begun. He vigorously protested against Madden's use of the douche, daily, and was more in accord with the Vienna school, where the uterus was washed out thoroughly with a weak (two

and one-half per centum) carbolized solution, and a bacillus of iodoform weighing from sixty to seventy grains introduced. No more interference. The use of the douche not repeated, unless in exceptional cases. There was no danger from iodoform poisoning.

Dr. J. F. Y. Paine, of Galveston, Texas, in twenty-four years had but one case of puerperal fever. The best prophylaxis was to secure firm contraction of the uterus and to remove clots. The uterine douche was meddlesome and hurtful, in many cases. Cleanliness, rest, quiet, good air, and good diet were all important. Quinine and iron might be given in some cases.

Dr. D. T. Nelson, of Chicago, Illinois, mentioned a very grave case of puerperal septicæmia where sulphuretted hydrogen gas was used, as in Bergeon's method in phthisis. At first the sympoms became more favorable, then diarrhœa set in. The treatment was contined cautiously, but rectitis and hæmorrhage appeared, and the patient died. Here, at first, the treatment seemed to be beneficial, but later, no doubt, hastened her death.

In a second case, in the third week of typhoid fever, a miscarriage occurred at the third month. The fever became septic, with a characteristic scarlatinal rash. The same treatment was used, employing the gas in smaller quantity, and with immediate amelioration and recovery.

Dr. William T. Stewart, of Philadelphia, Pennsylvania, indorsed Professor Hewitt's views, and thought the liquor sodæ chlorinata, ℥ ij. to O ss., the best for vaginal douching.

Dr. Lloyd Roberts, of Manchester, England, used quinine, irrigation, and the curette when necessary. Mild cases would get well without treatment. He did not agree with Dr. Sibbet that the doctors and nurses so often carried the disease. He considered the mercuric-bichloride douche dangerous when strong; calomel was used successfully forty years ago. Could it not have had an antiseptic action?

Dr. Cameron, of Montreal, Canada, did not think we could treat the disease intelligently until we realized that puerperal fever and puerperal septicæmia were synonymous. There was no such thing as auto-infection; endosepsis was a pernicious myth. His views were in accordance with those of Professor Jaggard. Antiseptic precautions were to kill or to prevent the entrance of germs. There was a very general lack of knowledge as to when or how to use antiseptic measures. The douche and curette were valuable in the right place, but harmful in others.

When one has used the douche, iodoform, and the antiseptic pad, why use other local measures? The canal had been sterilized. Food, stimulants, rest, and iron were important. There was no specific treatment. Each case should be studied. Local conditions required local treatment, general states general treatment.

Professor Charles Warrington Earle, of Chicago, Illinois, thought the ground had been very thoroughly gone over by Dr. Cameron. He believed in adopting absolute antiseptic precautions beforehand. If possible, there should be clean, intelligent nurses. The cause of the sepsis should be sought; if in the uterus, one should clear it out and the patient would probably recover.

Dr. Rodney Glisan, of Portland, Oregon, presented a paper on

CONSERVATIVE OBSTETRICS; WITH SPECIAL REFERENCE TO THE REMOVAL OF THE SECUNDINES AFTER ABORTION, AND TO THE TREATMENT OF THE THIRD STAGE OF LABOR.

He thought that the expectant method of treating retained secundines after abortion and the placenta after labor was unsafe in private practice, especially when the physician resided at a distance from his patient; yet it might succeed fairly well in hospitals under the constant vigilance of experienced practitioners.

He approves of the immediate removal of the secundines after abortion in all cases where the cervix is somewhat dilated or dilatable, as is generly the case for an hour or so after the expulsion of the embryo, and in all cases of septicæmia or dangerous hæmorrhage, no matter when they occur. When neither of these accidents is present and the cervix is closed, he does not advocate the immediate and forcible removal of the secundines, but would wait a more favorable condition, when the finger could be easily inserted, moderate hæmorrhage being controlled by ergot, the tampon, etc. No instrument in these cases was so safe, trustworthy, and generally useful as the finger. He adopts the bi-manual method, depressing the uterus with one hand to within reach of the finger of the other, giving an anæsthetic, if necessary.

In the removal of the placenta, during labor, the author used the Credé method, supplemented by moderate traction on the cord. He does not believe that moderate traction on the cord, when the uterus is well contracted and properly grasped by one hand externally, is attended by the least risk of inversion or of increasing the hæmorrhage by a suction-like process of the placenta on the cavity of the womb. He thinks that traction upon the umbilical cord as an aid to delivery of the placenta ought not to be abandoned.

Professor Graily Hewitt accorded perfectly with Dr. Glisan. In cases of abortion there was often great difficulty in passing the internal os. We must not expect the os to be open until the abortion had continued for some time. Instruments other than the finger were dangerous. He was much impressed with the importance of not allowing the secundines to remain long in the uterus.

Others present expressed the same views.

AFTERNOON SESSION.

Dr. Edward Henry Trenholme, of Montreal, Canada, presented a consideration of

INTERNAL UTERINE HÆMORRHAGE, THE RESULT OF OVER DISTENSION OF THE UTERUS FROM HYDRAMNIOS.

The author pointed out some of the causes of hydramnios and the serious result of such distension. The distension caused deficient nutrition of the decidua which allowed it to rupture, causing hæmorrhage from the site of the tear. The blood might clot *in situ* or pass between the layers of the deciduæ. The hæmorrhage began with severe pain and sense of fullness, signs of internal hæmorrhage. We should forestall the danger by causing premature labor before the hæmorrhage occurred, that is, as soon as the distension becomes excessive. Should bleeding have occurred, it is necessary to wait until the vessels have closed before one attempts treatment.

A posthumous paper by Dr. W. T. Taylor, of Philadelphia, Pennsylvania, on

MATERNAL IMPRESSIONS AFFECTING THE FŒTUS.

was read by title.

SECTION ON GENERAL SURGERY.

THIRD DAY—MORNING SESSION.

Dr. W. N. Hingston, of Montreal, Canada, discussed Professor McLean's paper of the preceding day. He remarked that he agreed with him in all but one thing, viz., regarding abdominal section. He had operated in three cases; in two of these cases he had made the abdominal section, and both patients died from shock. In the second case he performed the lumbar incision and the patient survived, and there was but little disturbance of the system after the operation. The speaker considered the lumbar incision advisable in all cases where possible.

Mr. Edmund Owens, of London, England, thought there were three factors which should guide us in the operation.

If there was a doubt about the operation, it should be done through the abdominal wall. Again, the size of the tumor must be considered. And in what line of the profession is the operator called, gynæcology or surgery? This latter will often decide the point according to the ground he is apt to go over.

Dr. Hardy, of Indianapolis, Indiana, mentioned a fatal case where the median incision was made.

Dr. F. Lange, of New York, N. Y., used the lumbar incision; and if the tumor was too large to be removed, he thought it a good plan to incise it and perform a second operation when it had been reduced.

Professor McLean, in conclusion, remarked that perhaps he was not quite understood, as he had distinctly stated in his paper that where the lumbar incision could be performed it was preferable. In the cases he mentioned he had no choice. His first case the speaker thought was an ovarian tumor, and naturally made section in the median line.

Dr. Richardson, of Boston, Massachusetts, read a paper on

GASTROTOMY FOR FOREIGN BODIES IN THE THROAT.

A patient (male), thirty-seven years of age, was presented to the section, from whom the doctor had removed a plate with four teeth attached from the lower portion of the œsophagus, about one and one-half inches from the stomach entrance, by performing gastrotomy. When first seen by the doctor, he could discover no obstruction, but the man was, however, retained in the hospital. He was finally discharged apparently well, the pain at the point indicated by him having subsided, and he was able to eat his meals. Eleven months later he returned very much emaciated, the pain had returned and was much more severe; gastrotomy was decided upon and the operation performed, the opening being made large enough to admit the hand; the plate was then discovered in the location stated. Owing to its long retention a small abscess had formed there, which subsequently ruptured, but the patient made a rapid recovery.

The speaker remarked that had he been certain that the plate was there, he was positive he could have removed it with the forceps; but the difficulty lies in locating, and also the location of the cricoid cartilage and the cardiac opening. He had operated in sixty cases, and found the average distance from the incisors to the cardiac opening to be fourteen and one-half inches; the longest was seventeen inches, and the shortest ten and one-half inches.

The writer described minutely the anatomy of the parts and location of the plate removed;

showing that by gastrotomy or œsophagotomy the œsophagus could be reached at all points with ease.

Professor F. S. Dennis, of New York, N. Y., presented some specimens of *scarlet fever bacilli* sent by Professor Lee, of Edinburgh, Scotland. He then read a paper on

AMPUTATION OF THE HIP-JOINT FOR SARCOMA.

The case was quoted in order to induce surgeons to report such cases and the results. Out of twenty-eight cases of sarcoma of the thigh, only two were living.

The case at present was a young man seventeen years of age, whose family history was excellent. Five months before entering the hospital the swelling in the left thigh commenced; it had been aspirated, and ten ounces of fluid removed. The tumor when seen was ten inches in length, and twenty-seven in circumference, the inguinial glands were slightly enlarged.

The diagnosis of sarcoma was made, and amputation at the hip-joint was decided upon. No elastic bandage was applied to the leg, but a strong rubber band was passed around the thigh above the joint, which controlled all hæmorrhage, and the operation was a bloodless one. On the sixth day the dressings were removed, and the wound was found to have united by first intention; temperature did not rise over 100° F., and only reached that point on one day.

The points worth noting are: (1) this patient had a sarcoma, with no hereditary taint; (2) there was no exciting cause; (3) the great rapidity of the growth; (4) absence of metastasis; (5) rapid return to health, as the boy is perfectly well now: (6) importance of secondary hæmorrhage; (7) unfavorable prognosis in his condition; (8) the diagnosis was confirmed by the microscope in the hands of Dr. Grower; (9) abscess limited to shaft of the bone; (10) absence of a spontaneous fracture of the femur; (11) large size of the mixed cells of the sarcoma; (12) radical removal of the tumor by amputation at the hip-joint, not at the upper third of the thigh.

Dr. Garmody, of New York, N. Y., read a paper on THE SURGICAL TREATMENT OF TRAUMATIC INSANITY BY MEANS OF THE TREPHINE.

The speaker reported the case of a young woman who was struck on the head with a brick, causing depression of the skull; she had been trephined shortly after, but ten years later she began to exhibit symptoms of insanity; trephining was suggested by the speaker, and the operation followed out, the space, after the operation, being three and a half inches by two inches. No elevation of temperature followed, and at the end of twenty-one days she was perfectly rational; the wound united by first intention.

Sir James Grant, of Canada, remarked that the case was an interesting one, and in his experience of brain surgery he had found that the lower type of brain would bear a fracture of the skull much better than those of an intellectual type. He quoted the case of a mill-hand who fell out of a window and fractured his skull. The speaker was sent for, and on his arrival found the man walking about, and yet there was a depression in the back of the skull in which the finger could be inserted; the brain, he considered, became very sensitive in educated individuals,

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SECTION ON MILITARY AND NAVAL SURGERY AND MEDICINE.

THIRD DAY—MORNING SESSION.

The first paper of the day, upon

THE PROPER TREATMENT OF PENETRAING WOUNDS OF THE JOINTS,

was read by the author, Professor Frederic Hyde, of Syracuse, New York.

After a critical review of the history of the subject, of the methods advocated by various civil and military surgeons for the treatment of these wounds, and the textural changes resulting therefrom, the author stated that the result of the wound, whether incised, lacerated, contused, or punctured, depends upon the intensity of the inflammation and the destruction of tissue, and presented his views as to the treatment. These may be summarized into: The arrest of hæmorrhage; treatment of shock; the removal of foreign bodies from the wound, which should be enlarged, if necessary. In all cases of suppuration a direct opening should be made for its evacuation. After any form of injury an effort should be made to save the limb; perfect immobility should be secured by plaster of paris or other fixative dressing; finally, pain should be alleviated, and the general condition be improved by stimulants, good food, and the like, according to indications. The treatment of the injury throughout should be antiseptic. The speaker contrasted the earlier treatment of joint-wounds, which forbade the opening of a suppurating synovial sac, with the treatment of to-day, and characterized the former as the spoliative and the latter as the saving treatment. Amputation should only be resorted to as a *dernier ressort*.

The next paper, upon the same subject, by Dr. George L. Porter, of Bridgeport, Connecticut, was then read. It had especial reference to the injuries of the larger joints, particularly that of

the knee. The treatment should be adapted to each individual injury; aseptic precautions, complete rest, the ice-pack, and expectant treatment generally the author thought to be applicable to most cases.

Dr. Eli A. Wood, of Pittsburg, Pennsylvania, read a short paper on this important subject, which in the main coincided with the views as expressed by Dr. Hyde.

Dr. Marston, of England, favored amputation.

Dr. Janes, of Waterbury, Vermont, stated that his experience had been an unfortunate one, all his cases having died.

Professor E. H. Gregory, of St. Louis, Missouri, inveighed against resorting to amputation, and favored the opening of the wound under aseptic precautions and removal of foreign bodies, and careful supporting treatment.

Dr. G. T. Langridge, of England, spoke of his large experience in wounds of the knee-joint produced by machinery; under aseptic treatment a very large proportion of cases recovered completely.

Dr. L. von Farkus, of Buda-Pesth, Hungary, stated that during the late Servo-Bulgarian war there were observed nineteen cases of gun-shot penetrating wounds of the knee-joint, all of which were, with one exception, treated by fixation by the plaster of Paris bandage, after free opening under antiseptic precautions and drainage; fever was absent in all cases, and all recovered, including the exception mentioned, which was a case of injury so serious as to require amputation.

THIRD DAY—AFTERNOON SESSION.

The paper of Dr. W. S. Tremaine, U. S. army, entitled

IS LAPAROTOMY FOR GUN-SHOT WOUNDS OF THE INTESTINES FEASIBLE IN MILITARY PRACTICE AND ITS TECHNIQUE?

and another upon

THE TREATMENT OF PENETRATING WOUNDS OF THE ABDOMEN, WITH WOUND OF THE INTESTINES,

by Dr. Frances Patrick Staples, of the British army, were read by title.

An abstract of a paper upon.

THE PROPER TREATMENT OF PENETRATING WOUNDS OF THE ABDOMEN,

by Dr. S. T. Armstrong, U. S. Marine Hospital Service, was, owing to the absence of the author, read by Dr. Smith, of the army. The main points made by the writer were, that the treatment must depend upon the part injured, and that rest, sedatives, expectant treatment, with laparotomy as a last resort should generally characterize it.

The next paper, also upon this important subject, entitled

ON NON-FATAL PENETRATING GUN-SHOT WOUNDS OF THE ABDOMEN TREATED WITHOUT LAPAROTOMY,

by Henry Janes, M.D., of Waterbury, Vermont, was read. The author maintained that the tendency at present is to too much operating upon the abdominal cavity. He had tabulated the cases observed by himself during the late war, of penetrating gun-shot wounds of the abdomen, covering twenty-seven cases, eighteen of which were complicated by lesions of the abdominal viscera, and other cases of injury to pelvic and abdominal organs. In none of those cases had operations been performed, except for the purpose of removing fragments of bone, the missiles, or other foreign bodies.

The papers upon the subject of Penetrating Gunshot Wounds of the Abdomen, elicited an interesting discussion, in which Dr. Thomas G. Morton, of Philadelphia, Pennsylvania, participated.

The first point to be considered, he said, in the treatment of these wounds, is whether the patient is in a proper condition for an operation; upon this depends the success of many operations. Another point of great importance is the positive knowledge of the existence of a perforation of the intestines or other abdominal organs, or even of a mere penetration of the peritoneum, without such complication. There being no doubt in the surgeon's mind as to these points, he should not have the least hesitation in opening the abdomen. There exists, in all cases of penetration, a possibility of loss of blood from some severed vessel, and of the escape of fæcal matter into the peritoneal cavity.

The abdomen should always be opened under strict antisepsis; thus the operation is attended with little danger. In cases of stab-wounds of the abdomen, with perforation of the peritoneum, he would advise making an incision sufficiently large to enable the surgeon to clearly see what he is doing, and, having secured any bleeding vessels, washing out the cavity with a warm solution of bichloride of mercury, a 1–10,000, until the water returns perfectly clear, and then sewing the wound in the usual way. He prefers, in the majority of cases, to make the incision over the middle line, except in perityphlitic abscess, when he makes a curvilinear incision over the most prominent parts of the abscess. His experience has taught that a large incision is better than a small one, and safer in every respect. For a gunshot wound he proceeds in the same manner. In a boy seventeen years of age, with a penetra-

tion of the transverse colon, and a young negro with a similar injury, upon whom he lately performed this operation, the temperature did not exceed 101° and 102° F., respectively, and this for the first day only, recovery being perfect and rapid in both cases.

Dr. Henry Janes, of Waterbury, Vermont, asked Dr. Morton how long a time such an operation as he had described usually required.

Dr. Morton, in answer, replied that the time varied somewhat, according to the seat and extent of the injury, but that from one hour and a half to two hours was, as a rule, sufficient.

Dr. Varian, of Titusville, Pennsylvania, desired to know Dr. Morton's opinion as to the practicability of performing this operation upon the battle-field.

Dr. Morton, in reply, thought it would be difficult, but that the numerous objections which had been given concerning the impracticability of operating were easily disposed of. In the first place, the probable abundance of pure spring water in the neighborhood with which to prepare the solution of the bichloride—which can easily be carried in the pocket—and the removal of the patient to some field hospital, were, of themselves, conditions which would enhance, rather than diminish, the chances of success. He considers it the surgeon's duty, in the light of recent experience and observation, not to temporize, but to make an effort to save the patient; this operation can do it, while the expectant treatment involves many dangers. He is confident that something can be devised for use on the battle-field; a modified antisepsis is better than no antisepsis at all.

Dr. Daniel Smith Lamb, of Washington, D. C., asked how large a wound would induce him to operate.

Dr. Morton replied that the slightest perforation of the peritoneum was an indication for the operation, for it is well known that these small wounds may be, and are often, followed by grave results. He said that he advocates the opening of the abdomen in typhoid fever when perforation of the intestine by ulceration has taken place; such an operation gives the patient the greater chance of recovery.

The President, Professor Smith, adverted to the great importance of this subject. What we want, to deduce conclusions for our future guidance, is an accumulation of facts. Dr. Morton, by his remarkable success in these cases, which success was not, it may be confidently asserted, the result of mere chance, and the New York surgeons, with their recent experience, had, he thought, been accumulating such facts very rapidly. In the light of these facts the legal responsibilities of the surgeon should be considered. The President concurred with Dr. Morton in his views as to the possibility of modifying antisepsis to meet the exigencies of the battle-field.

Dr. Moore, of Richmond, Virginia, read a paper entitled

THE TREATMENT OF PENETRATING GUNSHOT WOUNDS OF THE ABDOMEN.

The author gave statistics of cases of this nature and the rate of mortality, and quoted at length from reports of the French and British armies.

No surgeon had, in his opinion, had sufficient experience with this operation, which was comparatively a new one, to be considered an authority on disputed points. He spoke of the difficulties of diagnosis of perforation, and advocated the exploration of the wound with some delicate instrument. The incision should be made only sufficiently large to allow a thorough exploration, and the earlier after the reception of injury, barring the occurrence of shock, the greater were the chances for recovery. It is the opinion of Sir William Malcolm that if the operation be delayed twenty-four hours no case ever recovers.

In conclusion, he advocated supporting measures and the use of quinine hypodermically, previous to the operation, to diminish the liability of resultant shock.

Dr. Varian's views were in harmony with those of Dr. Moore, so far as civil practice is concerned, but the question still to be discussed was the treatment of such cases upon the field of battle.

Dr. Watson, of Jersey City, New Jersey, agreed with Dr. Morton.

Dr. Bentley, of Little Rock, Arkansas, dissented from the opinion of Dr. Morton, and regarded the application of the method of treatment as impossible on the battle-field, as it is an operation which requires skill, time, and care. He, however, recognized its value in private and hospital practice, where all the conditions are favorable.

SECTION ON PATHOLOGY.

THIRD DAY—MORNING SESSION.

THE PIGMENTATION OF THE SKIN AT THE ARTICULATION OF THE PHALANGES IN CHLOROSIS.

Dr. Pouget, of Cannes, France, read a paper on this subject, in which he directed special attention to pigmentation of the knuckles, a fact first noticed by Bouchard, of France.

Dr. Thomas Taylor, of Washington, D. C., read a paper on the

CRYSTALLOGRAPHY OF FATS,

in which he directed special attention to their condition and relation to health and disease.

THE ETIOLOGY OF LIVER ABSCESS

was the title of a paper sent by Dr. Kartulis, of Alexandria, Egypt, and read by Dr. J. S. Grant (Bey), of Cairo.

Professor Charles W. Earle, of Chicago, described

FIBROID DEGENERATION OF THE PANCREAS,

of which he had reported cases, and which was liable to be mistaken for cancer.

AFTERNOON SESSION.

Dr. John North, of Keokuk, Iowa, read a paper on

THE PATHOLOGICAL RELATIONS OF PTOMAINES AND LEUCOMAINES.

The paper was discussed by Dr. Johnson and Dr. Keller, and was followed by a paper on

TYROTOXYCON,

by Professor Victor C. Vaughan, of Ann Arbor, Michigan.

SECTION ON DISEASES OF CHILDREN.

THIRD DAY—MORNING SESSION.

Dr. Cyrus Edson, of New York, N. Y., read a paper on

THE MILK-SUPPLY OF CITIES,

calling attention to the great importance of improving and maintaining the standard of milk-supply by banishing adulterated and infected milk. He advocated the examination by veterinary inspectors, from time to time, of every herd of cattle in the state, in order to secure the destruction of all animals suffering from tuberculosis, and the quarantine of those liable to cause contagious disease.

Professor Albert Leeds, Hoboken, New Jersey, stated that the work done by inspectors in preventing the dilution of milk is important from a commercial rather than a sanitary point of view, as water is in itself harmless. The best work is done when official inspection is extended so as to include the pasture, the stall, and the dairy. Skilled and scientific effort in this direction would prevent the spread of infectious diseases from cattle to man.

A paper was then read by Dr. Paul Redard, of Paris, France, on

THE TREATMENT OF ERECTILE TUMORS BY ELECTROLYSIS.

The writer described in detail the method proposed by Ciniselli de Crémorne, which, with some modifications, he had found satisfactory in a large number of cases in dispensary practice. The operation is moderately painful, and the effect rapid, with no suppuration or scars.

Dr. De Valcourt, of Paris, France, then read a paper on

THE TREATMENT OF TUBERCULOSIS BY SEA-BATHING.

AFTERNOON SESSION.

Dr. Isaac N. Love, of St. Louis, Missouri, opened the session by reading a paper on

INFANTILE MARASMUS.

He reviewed a class of cases distinct from those caused by tuberculosis, syphilis, and intestinal catarrh. In an advanced stage they present a picture the principle features of which are wasted muscles, prominent bones, a loose and dry skin, and face withered, wrinkled, and wan. Careful study of a large number of such cases had led him to the following conclusions:

1. Infantile marasmus is dependent primarily on torpidity and inactivity of the glandular system, and is aggravated by unsuitable, over-abundant, or insufficient food and unsanitary surroundings.

2. It is of the first importance, in treatment, to arouse secretion and excretion, the best remedy being calomel in doses of one-twelfth of a grain, with the free administration of water; both of these agents exciting glandular action, stimulating the secretion of the digestive juices, and promoting diuresis and intestinal secretion.

2. "In the matter of diet, the mother's milk is the best, and some other mother's milk the next best."

4. In extreme cases it is best to administer soluble foods in the form of baths, and to practice gentle friction and massage, with an occasional bath in water containing a diffusible stimulant.

A paper was then read from Dr. William Henry Day, of London, England, entitled

SOME OBSERVATIONS ON HEADACHES IN CHILDREN, AND THEIR RELATION TO MENTAL TRAINING.

The writer considered the characteristics of nervous, frontal, and neuralgic headache, and the condition known as irritable brain. One form or the other is the first and most persistent symptom of the breaking down which follows the mental over-pressure which now prevails in education,

and in the competitive examinations for entrance in every profession and in every branch of the public service. The irritable brain is not infrequently accompanied by myopia, hypermetropia and astigmatism.

Dr. William S. Dennett, of New York, N. Y., recognized the type of headache to which Dr. Day had referred as associated with refractive troubles, as well as the occipito-cervical discomfort associated with muscular insufficiency. It would be well if all cases of incipient myopia were attended with a forewarning headache.

Dr. William D. Booker, of Baltimore, Maryland, then read a paper, entitled

A STUDY OF SOME OF THE BACTERIA FOUND IN THE DEJECTA OF INFANTS AFFECTED WITH SUMMER DIARRHŒA.

Twelve different varieties of bacteria had been isolated. Eleven were bacilli and one belonged to the cocci. Two of the bacilli only liquefy gelatine. Their action on milk is as follows: Some coagulated casein with acid reaction and evolution of gas, one variety caused coagulation with akaline reaction, one gave the milk a peptonized appearance, other varieties caused no perceptible change.

In guinea pigs, young kittens, and white rats and mice the post-mortem results were fully detailed in the paper, and an interesting discussion followed.

SECTION ON LARYNGOLOGY.

Third Day—Morning Session.

Dr. H. H. Curtis, of New York, N. Y., being absent the paper by him on

SURGERY OF THE NASAL SEPTUM AND TURBINATED BODIES.

was read for him. He classified various deformities of the septum so as to more accurately describe the different operations. Operations on the turbinated tissues were disposed of in systematic manner, and attention was given to catarrhal conditions of the ethmoidal cells.

Dr. F. Massei, of Naples, Italy, sent a paper on

PRIMARY ERYSIPELAS OF THE LARYNX,

which, in his absence, was read for him. It opened by quoting a list of authors who admitted that there was a primary erysipelas of the larynx. It is fortunately a very rare disease, and no good clinical history is given showing the laryngeal appearance. The disease is usually secondary to erysipelas elsewhere on the body; where primary it is found in hospitals where the air is bad, and where the patient's bed is near that of another who has an attack of erysipelas. The disease may begin in the throat and attack the skin later. In 1885 his attention was called to cases in private families where there was primary erysipelas of the larynx. The cases had not been exposed, to his knowledge, to infection from other cases of erysipelas. There was no manifestation of the disease elsewhere on the body. He noticed one form where the local symptoms were most prominent, and another where there was early collapse. It may extend to the lungs without any external appearance of the disease.

Early symptoms are, difficulty of swallowing and talking, change of voice, with pain; fever is high, and pulse rapid. Epiglottis swollen, mucous membrane of larynx intensely congested and reddened, also much swollen. Narrowing of glottis even to suffocation may occur as symptoms increase in severity, and we find aphonia and dyspnœa, caused by swellings and and œdema over arytenoid cartilages and ary-epiglottic folds. The swelling has a way of migrating from one part to another, may sink down on one side and the other become rapidly tumefied. The swelling of a part is preceded by intense congestion. Frequently there is an eruption of blisters or bullæ. These burst and form crusts with mucous and blood. Fever is more or less relapsing, temperature varies from 40° to 38° C., but is not periodical in its changes. Lymphatics are very sensitive, and neighboring glands are swollen and inflamed. After several relapses of temperature, we may have resolution and recovery, or death from asphyxia if tracheotomy is not resorted to, or collapse from extension to the lungs. More apt to extend to the lungs in the aged. In treatment use ice or coil to the larynx, also counter-irritants; use bichloride mercury, one to two-thousand, as a spray. If patient cannot swallow food through a tube when œdema or bullæ interfere seriously with breathing, then scarify, and resort to tracheotomy if necessary. In migrating from one part to another, it may be rapidly fatal so as to give no time for action. The treatment must be expectant and should vary with the symptoms.

Professor F. O. Stockton, of Chicago, Illinois, saw a case of a powerful and healthy man, who came to Chicago for nasal trouble. He contracted what he thought was severe cold, and had symptoms rapidly increasing in severity; pulse, 140; temperature, 103½°, preceded by severe rigors. There was great difficulty in breathing, with aphonia. The epiglottis was thick and red, so also were the arytenoid and folds between, and thickly covered with small blebs. There was more or less œdema over the arytenoids, with numerous blisters. The Ven-

tricular bands covered the true vocal cords, and almost completely closed the glottis. He tried intubation, which worked perfectly, to relieve dyspnœa; but the redness of the erysipelas extended over the pharynx to post-nasal space and through the nose, then over face and eyes to the forehead. The patient recovered.

Dr. Benham, of Pittsburgh, Pennsylvania, thought it more common than is usually supposed, and there is no disease more distressing or more likely to tax the physician's resources much more. He has never seen a primary case of it. Instant relief sometimes results from scarification. He cannot understand the sudden recovery that sometimes occurs.

TWENTY YEARS OF LARYNGOLOGICAL WORK IN THE CITY OF MEXICO

was the title of a paper sent by F. Semeleder, M. D., of Mexico. It treated chiefly of the difficulty of getting books and instruments early in his career, and described how long laryngology was unknown there. He gave a list of prevalent troubles, and the various operations which he had performed.

PRESENT STATUS OF THE GALVANO-CAUTERY IN THE TREATMENT OF THE DISEASES OF THE UPPER AIR-PASSAGES, ILLUSTRATED BY INSTRUMENTS AND THE DESCRIPTION OF CASES,

was the title of a paper by Professor F. B. Eaton, Portland, Oregon.

The author being absent, the paper was read and the instruments exhibited.

Inventive faculties are stimulated continually to devise more radical methods of treating nasal catarrh. It is best to avoid over-medication, over-treatment. He considers specialists a necessary evil. There will be a reaction and less operative interference result. He defends the galvano-cautery against charges of its being cumbersome and expensive. It is only relatively so. It is never disappointing in its results, but surpasses one's expectations. It is not as much disliked by patients as acids, and it is easier to regulate the effect. Patients fear it less than knives, saws, and snares. There is little or no pain when twenty per centum solution of cocaine is used. The operation is clean, with no hæmorrhage; one can remove small exostoses and cartilaginous masses, but not large ones. A saw is better for them. Puncturing them may cause enlargement and fatty degeneration. He treats hypertrophies by puncture and incision with cautery, punctures and moves the point freely in the mass, so as to cause contraction without destroying the external tissues. His battery and various electrodes were exhibited. He has in operating used rhigoline, after Dr. Jarvis' method.

Dr. R. H. Thomas agreed with Professor Eaton's conclusions as to the general applicability of galvano-cautery, but did not consider it as successful for large hypertrophies as the cold snare. He considered twenty per centum of cocaine as far from safe for indiscriminate use. He has seen too many unpleasant effects from even weaker solutions. He never needs over ten per centum as the highest.

SECTION ON PUBLIC AND INTERNATIONAL HYGIENE.

THIRD DAY.

The president read a paper from Dr. B. W. Richardson, of London, England, on

THE GROWTH OF PREVENTIVE MEDICINE IN GREAT BRITAIN.

Dr. Dominigos Freire, of Rio de Janeiro, Brazil, read a paper

ON VACCINATION IN YELLOW FEVER,

the tenor of which was that the disease can be prevented by inoculation with attenuated virus. The paper was accompanied by microscopic specimens of the microbe of yellow fever.

Dr. Freire being asked what was his theory concerning the attenuation of the virus of yellow fever, answered, by oxidation through the red corpuscles of the blood, and the proper or improper medium into which it is placed; but, he added, all this is *as yet* only conjecture.

Dr. Bailhache, Marine Hospital Service, asked if vaccination in one family arrested the progress of the fever in that family?

Dr. Freire answered in the affirmative, stating that in families of ten and fifteen members, living in *one hut*, if vaccination was practiced after the outbreak of the fever among the members not yet affected, that this arrested the further progress of the scourge; whereas, where it was not practiced they all were stricken down with the fever and many, if not all, died.

SECTION ON PSYCHOLOGICAL MEDICINE AND NERVOUS DISEASES.

THIRD DAY—MORNING SESSION.

Professor Mendel, of Berlin, Prussia, read a paper on

THE ORIGIN OF THE UPPER FACIAL NERVE,

which was illustrated with numerous sections of the brain.

The paper was discussed by Dr. E. C. Spitzka, of New York, N. Y.

Dr. E. A. Homen, of Helsingfers, Finland, read a paper on

HISTOLOGICAL ALTERATIONS FOLLOWING AMPUTATIONS IN THE PERIPHERAL NERVES, THE SPINAL GANGLIA, AND THE MARROW.

Dr. Homen had two sets of observations, one relating to the effect on the spinal cord after amputations in dogs. In some of them he amputated the hind leg below the knee, in others the hind leg at the thigh, in others the fore leg at the shoulders. He kept some alive three weeks, some for months, and some for a year. He found that the atrophy, besides involving those limbs whose atrophy has been stated by previous observers, chiefly the posterior column, also involved a special cell-group of moderate or small-sized cells. This cell-group was atrophied when only the posterior roots were eliminated. He concluded that they had a sensory function. In most of his cases the ascending degeneration was very slight and difficult to identify. The second set of his observations related to the changes in the nerve-stumps, and corroborated those of Spitzka and others.

Dr. Homen presented some photographs illustrating the points he had stated in his paper.

Dr. E. C. Spitzka, of New York, N. Y., asked Dr. Homen more particularly as to the location of the degenerated area. He referred to the fact that in some cases a part in others the whole of the hindleg, in still others the whole of the foreleg, had been amputated ; the area of secondary ascending degeneration must have been different in each case. It seemed to him that in the last-mentioned case the degeneration should be in the comma-shaped field, in the former two in special parts of the column of Gall.

Dr. Homen replied that, on the whole, he supposed that expectation would be realized, but where he had succeeded in tearing out special posterior roots their number had been too few, and the consequent degeneration too slight, to permit of very accurate and positive location.

Dr. Otto's paper on

NUCLEUS-STAINING BY ANILINE DYES

was next read.

Dr. J. Langdon Down, of London, England, presented a paper, entitled

CASES ILLUSTRATING THE ASSOCIATION OF THE PROW-SHAPED CRANIUM WITH NEUROTIC DISEASE,

and cited several interesting cases which had come under his observation.

THIRD DAY—AFTERNOON SESSION.

The afternoon session was almost entirely occupied in the discussion on

SYPHILIS IN ITS RELATIONS TO INSANITY.

Dr. Savage, of London, England, opened the discussion. He said there were but few new facts to add. The object of his paper was clinical, not statistical. We have to sum up experience after the syphilitic wave of fashion has passed.

His experience resembled that of most others, that severe cases of brain-syphilis follow slight evidences of secondary trouble. Local syphilitic lesions often form the starting-point of general degenerations. He was unable, in many cases, to draw any defining line between true general paralysis and degeneration following cerebral syphilis. He believes that in some cases general paralysis depends on syphilis for its origin ; but does not believe it to be anything like a universal cause. Idiocy, imbecility, and moral perversion due to congenital syphilis, he thought, was rare ; most men connected with idiot asylums consider that but few idiots have congenital syphilitic histories. Other physicians, like Dr. Bury, think a fair number of cases are due to this disease. Many syphilitic children die in utero and early life. Syphilis may produce idiocy by causing disease of the envelopes of the brain, or of the brain itself, or by causing destruction of the organs of sense. Syphilis may cause epilepsy in children, and thus lead to idiocy. Some children of syphilitic parents are morally weak, and others break down in critical periods in development. To this last class belong the children of some general paretics.

Discussion then followed upon these two points in Dr. Savage's paper.

Dr. E. D. Ferguson, of Troy, New York, instanced a case of general paralysis in a male patient who, near the time of his marriage, had contracted syphilis; which, on account of his previously correct life, was not suspected, and went on to a considerable extent before specific treatment was resorted to; when syphilis was finally suspected and treatment actually entered upon, the patient had become insane. At all times after he had contracted the disease, he had suffered from great mental depression and mortification; he could never get over the sense of shame. At the post-mortem there were found gross lesions of the membranes of the brain and of the bones of the skull.

Dr. Hurd, of Pontiac, Michigan, had no doubt but that a true syphilis will produce the simpler psychoses like mania and melancholia. He cited a case that had come under his observation, of what appeared to be acute mania, and a short time after admission it was discovered that

she suffered from syphilis. She had the syphilitic rash, the rise in temperature, and these and other symptoms lasted several weeks. She was at once put upon treatment, with the effect of alleviating the symptoms, and there was a corresponding improvement in her mental condition. There was at all times, however, a tendency to relapse of the syphilitic troubles. The disease went on and displayed characteristic constitutional symptoms. After two or three years' treatment, the syphilitic trouble was finally in such a state of abeyance that the girl was sent home on trial, and has remained at home nearly a year. He had no doubt but that she would sooner or later be returned to the asylum, in consequence of the syphilitic trouble lighting up again.

Dr. C. H. Hughes, of St. Louis, Missouri, said syphilis manifests this peculiarity in the neural tissue: it produces abneural changes rather than changes within the structure of the nervous texture. This explains the facility with which syphilitic mental aberration is removable under adequate and vigorous specific treatment. He had seen syphilis often remain without manifestation for years after insanity, and finally develop in locomotor ataxy. We know there is such a thing as syphilophobia, and that it may exist without the pre-existence of any syphilitic poisoning. Syphilitic general paralysis, he had no doubt, was exceedingly common as the result of this poison.

Dr. W. W. Godding, of Washington, D. C., said he had never seen any mental symptoms whereby he could diagnose a case as syphilitic insanity. He cited the interesting case of a girl in his hospital, who came to him about nine months since in the most advanced stage of dementia. Syphilis was only suspected after she had been in the hospital some time, and had remained profoundly depressed. She was placed at once upon specific treatment, with the effect of bringing about an immediate change for the better, and she is to-day in a very comfortable condition of bodily and mental health.

Dr. E. C. Spitzka, of New York, N. Y., referred to a febrile condition in secondary syphilis, which is complicated with acute delirious mental disturbance. This he believed was a very rare thing. He had seen one case seven years ago, and had not seen anything written upon the subject since that time. The discovery had been made by Finger that during the roseola there was abolition of the knee-jerk. Finger had reported sixty-one cases in which the knee-jerk was absent.

Dr. E. N. Brush, of Philadelphia, Pennsylvania, said that two cases of syphilis were now under his observation, which served to confirm the statement of Finger. One of these cases had a short time ago a remission of symptoms of acutely maniacal excitement. He had been quiet and coherent, had parole of the grounds. For five days was very much excited, and there was a slight return of the knee-reflex, which had previously been entirely absent. He tore his clothing, had hallucinations, and disturbances of sight and hearing. Dr. Brush did not believe we should adopt the term syphilitic insanity.

Dr. T. W. Fisher, of Boston, Massachusetts, cited the case of an officer in one of the hospitals at Boston, who contracted syphilis, and suffered from a great sense of mortification, and went into a state of apprehension and sleeplessness, and finally developed delusions of suspicion. Under asylum treatment he recovered after the syphilitic symptoms had disappeared.

Dr. Brown, of Barre, Massachusetts, was glad to be able to support the ground taken by Drs. Savage and Down, in reference to very few imbecile children having congenital syphilitic histories. In his experience of thirty-five years he had noticed but one and one-half per centum.

Dr. Savage said that he agreed with Dr. Godding, that there was no such thing as syphilitic insanity. One might speak of a specific cause of asthma, and give it a title accordingly. The less said about syphilitic insanity the better in his opinion. As to the cases recorded of the febrile disturbance of constitutional syphilis, he was glad to note that it was, after all, not so uncommon, although it had hitherto been hardly recognized.

Dr. Savage then proceeded to the next branch of the discussion,

INSANITY DUE TO ACUTE SYPHILIS.

Such cases are rare. Probably some acute cases follow the delirium which may follow with the rash. Many lunatics exhibit venereal diseases contracted while insane. Insanity may follow the onset of secondary symptoms of the more severe type—thus, with optic neuritis, with ulcerations about the face—or it may appear with the onset of local paralysis of the third or other cranial nerve. It may occur with the neuralgia or sleeplessness of syphilis. The disfigurement may cause insanity. There are cases in which syphilis has acted as a moral cause and has set up a form of hypochondriasis.

Dr. Savage next passed to

SYPHILIS PRODUCING EPILEPSY, WITH OR WITHOUT INSANITY.

The epilepsy may be the chief symptom or

only a sign of widely spread disease, or it may be a symptom of general paralysis, or of locomotor ataxy. He said cases of epilepsy had come under his observation with a syphilitic history, in which he had not been able to find coarse lesions, as had been claimed to exist by Ferrier and Hitzig.

Dr. Hughes asked Dr. Savage if in his post-mortems he had been unable to find foci, either vaso-motor or vascular changes, microscopically.

Dr. Savage answered that the arterial disease was so general that he had not been able definitely to say that on the left side there was more arteritis than on the right.

Dr. Savage also said there was a good group of cases in which

PROGRESSIVE WEAK-MINDEDNESS

follows constitutional syphilis. It may be preceded by some motor symptoms, by either the ocular motor trouble, a monoplegia or hemiplegia, in one by aphasia, and in another with other motor trouble. There was another group in which sensory trouble, some temporary loss of vision or taste or hearing, some aphasia, which may be purely muscular, or some temporary giddiness may be the first symptom, which is followed by progressive degeneration, which is not of the same kind and not to be grouped with true general paralysis of the insane depending upon syphilis.

Dr. Channing asked Dr. Savage how he would classify the cases just described.

Dr. Savage replied that he would classify them as organic dementia; that seemed as good a classification as any.

Dr. W. Channing, of Boston, Massachusetts, asked if the term syphilitic dementia could be used, if there were sufficient cases to justify it.

Dr. Savage preferred organic dementia of syphilitic origin.

Dr. Gundry next discussed the question, and cited the case of a most respectable and highly connected young lady whose friends had noticed in her a growing tendency to *double entendres*, to slight smuttiness in conversation, and who were at a loss to account for this. He suspected syphilis, but was not for a long time listened to. Finally, after getting the patient on specific treatment, these morbid peculiarities disappeared.

Dr. Savage next discussed

THE GENERAL PATHOLOGY OF CASES OF INSANITY WITH SYPHILIS.

There may be a moral element in some cases, this being of two kinds, either producing hypochondriasis or true melancholia. Syphilitic cachexia may cause melancholic symptoms. Disease of the vessels, small or great, may produce different sets of symptoms.

Gummata are not so common as one would have expected. Inflammation of the membranes in both young and old may cause disease, such as idiocy or acute insanity.

Whether there are any changes in the neuroglia is doubtful. There are changes produced in the nutrition of the various parts, leaving a form of weakness which may act as a cause of fresh changes that may run an acute or chronic course.

Dr. Spitzka's experience coincided with that of Dr. Savage as to the absence of gummata.

He corroborated the conclusions of Dr. Savage. The connection between syphilis and tabes dorsalis was still a mooted question. He gave the case of an actor who had been under his observation for some time. This patient has abolition of both knee-jerks. His disease was at times controlled by treatment, and then recurred. He had had in the course of one day fifty or sixty attacks of a peculiar kind of *petit mal*, in which he lost consciousness for a moment while coming upon the stage oftentimes, but so briefly that he could recollect himself. In one case, where he had to cross a foot-bridge, he had an attack in the course of passing over, but went on as if nothing had happened, the *petit mal* losing its character as a loss of consciousness and becoming replaced by a peculiar sensory disturbance. He found that, accompanied by the prodromal feeling, all the faces of the audience were exactly the same. This sensation passed like an electric flash. He still has these peculiarities, although they are becoming rarer. They are a matter of interest to the patient himself, and he observes their course and peculiar symptoms.

After the reading of a paper by Dr. Ingram, of Washington, D. C., on

GUNSHOT WOUND OF THE SPINAL CORD,

the section adjourned until Thursday at 11 A. M.

GENERAL MEETING.

FOURTH DAY.

The congress convened at 10 A. M.

Dr. A. L. Gihon, U. S. navy, offered the following resolution, which was adopted:

Resolved, That the President of the Congress be authorized to appoint a committee, to consist of an equal number of members from each nationality represented in the Congress, for the purpose of selecting the place of meeting of the Tenth International Medical Congress, to be held in the year 1890; which committee shall report

on Friday morning, immediately before the address of Dr. Brandford.

The following committee was appointed to name the next place of meeting of the congress:

Argentine Republic—Dr. Villa, of Buenos Ayres.

Austria-Hungary—Dr. Farkas, of Buda-Pesth.

Belgium—Dr. Servais, of Antwerp.

Brazil—Dr. Freire, of Rio de Janeiro.

China—Dr. Boone, of Shanghai.

Egypt—Dr. Grant, Bey, of Cairo.

France—Dr. Landolt, of Paris.

German Empire—Dr. Martin, of Berlin.

Great Britain—Dr. Pavy, of London.

Italy—Dr. Semmola, of Naples.

Japan—Dr. Saigo, of Imperial Navy.

Mexico—Dr. Alvarado, of Mexico.

Roumania—Dr. Monolescu, of Bucharest.

Russia—Dr. Reyher, of St. Petersburg.

Spain—Dr. Lalearda, of Seville.

Sweden and Norway—Dr. Tillman, of Halinstadt.

Switzerland—Dr. Cordes, of Geneva.

Turkey—Dr. Post, of Beirút.

United States—Dr. Gihon, United States Navy.

Dr. P. G. Unna, of Hamburg, Germany, then delivered a general address on the

RELATIONS OF DERMATOLOGY TO GENERAL MEDICINE.

He endeavored to prove that every general practitioner has the greatest interest that dermatology should be more deeply and extensively studied. Dermatology, as a special branch, is still young, and not yet past the state of formation. The immense difficulties in the way of the study of diseases of the skin, which have up to this time disturbed its continuous development, are in great part well founded, as well in the external position of this organ as in its complicated structure. The author demonstrated these complications in detail, showed the differences in the appearance of the symptoms according to regional differences of the skin, the changes in symptoms in the course of the development of skin diseases, the varieties produced by external agents, the influence of climate, season, nature of countries, of races, sex and age. Among the external agents the parasites, according to our present knowledge, occupy the most prominent place.

These difficulties will in future be overcome only by minute analysis of each of the several symptoms of skin diseases. All progress in this direction will be of the greatest value for general pathology and therapeutics, because these facts are proved in the human tissue by means of the naked eye. Dermatology, studied properly, will advance all other parts of medicine—internal medicine as well as surgery—occupying a middle ground between them. Dr. Unna recommends, in place of experiments on animals for pathological and therapeutical experiments, to use the human skin, and showed by several examples how this method has led already to the knowledge of new facts. The endowment of new chairs and of separate private laboratories is not sufficient for a thorough investigation of skin diseases. He recommends the establishment of a central institute, where noted scientists could work together, where all means and methods of study could be condensed. Then dermatology can be raised to the rank of one of our most important specialties in medicine, and contribute largely to the progress of knowledge in all branches. Finally, he expressed the hope that the United States, always so liberal in the promotion of science, will be the first to develop this ideal.

SECTION ON GENERAL MEDICINE.

FOURTH DAY—MORNING SESSION.

Dr. Ephraim Cutter, of New York, N. Y., read a paper entitled

MORPHOLOGY OF RHEUMATIC BLOOD,

and illustrated it with stereopticon slides. He attributed the increased force of cardiac, with consequent exhaustion and inflammation, to the great adhesiveness of the blood.

Professor Mariano Semmola, of Naples, Italy, read a pager on the

PATHOGENESIS OF ALBUMINURIA.

He gave the results of original investigations made at the University of Naples.

Dr. Nunn discussed the paper, speaking favorably of the albumen diet.

Dr. Cutter, of New York, N. Y., regarded the diagnosis of Bright's disease as imperfect unless there are albumen and casts.

NOTES ON THE TREATMENT OF PHTHISIS, MORE PARTICULARLY THAT BY INTRA-PULMONARY INJECTION.

R. Singleton Smith, M. D., Bristol, England, read a paper on this subject. Since the last International Congress at Copenhagen, in 1884, numerous attempts have been made to do more than had previously been attempted for a disease in which the *vis medicatrix naturæ* does so little. The reader of this paper briefly summed up the various methods which have been recently suggested since the discovery of the bacillus of tubercle, and expressed his belief in the possi-

bility of benefit by treatment directed toward the destruction of the bacillary growth. He reported the result of his experience with regard to gaseous rectal injections, and said that in consequence of the absence of all indications of benefit he had given up this method entirely. He alluded to the work done by Professor Pepper, of Philadelphia, Pennsylvania, and Drs. Beverly Robinson and White, of New York, N. Y. In carrying out the method of intra-pulmonary injections suggested by these and other workers, he had met with partial success in a series of cases reported in the *British Medical Journal* in 1886.

In consequence of the proved utility of iodoform in chest disease, as shown by a steadily increasing mass of evidence since its first introduction for this purpose by Professor Semmola, in 1878, and supported by a series of cases presented to the International Congress of 1884, in which the author found increase of weight, improved appetite, diminution of temperature, and general improvement, under the administration of iodoform given by the alimentary canal, it was thought that iodoform would be the best substance to employ for injection into the parenchyma of the lung. The clinical utility of iodoform being the ground on which its use for this purpose has been founded, the evidence is not shaken by any statistics as to the comparatively feeble powers of the drug as a germicide.

The insolubility of the drug is the chief difficulty; various solvents have been used, but with only partial success. Ether is objectionable, because of its effects on the brain; giddiness and other feelings of discomfort rather alarm the patient, and give rise to an unwillingness to have a frequent repetition of the injections. Eucalyptus oil is irritating; two cases were mentioned in which acute pleuritis, with much pain, rise of temperature, and effusion had followed the injection of an iodoform solution in oil of eucalyptus. The vaseline oil, either alone or in combination with eucalyptol, had also been used, but the author considers the question, what is the best fluid to inject, to be still unsolved. He did not advocate the use of solutions containing free iodine or bichloride of mercury, and he would not in future employ any fluid for injection into lung which had not previously been tested hypodermically; if it gave rise to much inflammatory irritation in the subcutaneous cellular tissue he would not venture to inject it into the lung. He was of opinion that injections into cellular tissue might possibly be of some little service, although there was as yet not much reliable evidence on this point, but they would serve as a reliable test whether any given fluid was suitable for deep intra-pulmonary injection.

It is true that if iodoform be of use, as the clinical evidence indicates, then it is likely to be of far greater utility when injected, even in small quantity, into the focus of a diseased patch than when given in larger doses diffused throughout the whole body. Such injections have been shown to be not especially hazardous. Even the cases in which pleuritis has occurred had recovered completely from the attack in the course of a few days, and possibly the pleuritis was due to the failure of the fluid to pass beyond the pleural cavity into the lung-substance. Nevertheless, the author would not advocate the use of such injections in cases which were hopeless, neither would he employ them in cases where other and less active measures were accomplishing the object in view. He concluded his paper by urging perseverence in spite of failure, and by expressing his belief that what as yet was only a tentative investigation would ultimately result in numerous and signal successes.

Dr. Truax, of New York, said that he had little faith in iodoform, as he had cultivated the bacillus tuberculosis in its solution.

Afternoon Session.

Dr. Pavy, of London, England, spoke on

diabetes.

This disease has always been regarded as an inscrutable one. There are still many points open for earnest study and patient investigation. The nature of the disease is that of faulty disposal and assimilation of food elements. Foods taken into the body are classed as nitrogenous, fatty, and the carbohydrates. It is this latter class that especially concern us in diabetes. Starch-dextrine, lactic and cane sugar go to make up this group, and each has an equal action, when ingested, in causing the condition of diabetes.

Normally the carbohydrates are disposed of in the portal vein, whence they are carried to the liver and there assimilated. Experiments in which defibrinated blood or oxygen have been injected into the portal vein have been followed by marked evidences of sugar in the urine. Similar results have been produced in animals by forced respiration, thereby supersaturating the blood with oxygen. Vaso-motor paralysis of the hepatic vessels, by causing an excess of blood, prevents the proper deoxygenation of the blood, and similarly causes sugar to be present in the urine. This condition allows the carbohydrates

to be converted into sugar and pass through into the general circulation.

In the celebrated experiments of Bernard, in puncturing the floor of the fourth ventricle, he also noticed a vaso-motor paralysis of the hepatic vessels. It is noticeable that in those cases of vaso-motor paralysis of the chylopoiëtic system where there is a red tongue the disease is more severe, undoubtedly owing to the fact that the paralysis has extended more generally throughout the circulatory system.

In health there is only a faint trace of sugar in the blood and the urine. The latter is always a reliable index as to the amount of sugar in the blood. In diabetes the sugar reaches the blood directly, without going through the process of assimilation in the liver. In health, sugar is stopped before it enters into the general circulation, but in diabetes it is found in the blood directly in proportion to the quantity of carbohydrates taken. Sometimes even in health there is sugar in considerable quantity in the urine, in cases where there has been taken very large quantities of the carbohydrates, showing that there is a normal limit to the assimilative power of the liver, which, if exceeded, will result in a diabetic condition. The liver is a fat, rather than a sugar-producing organ, converting animal starch into sugar and then into fat. The liver is different from other organs in that it has small arteries and large veins. The contents of the portal vein should be in a decidedly venous condition, otherwise we will get sugar into the general circulation.

Diabetes is of a neurotic origin, and it is well established that nervous conditions influence in a material manner the condition of the patient.

In considering these cases the first thing to do is to test for sugar in the urine, and in order that we may fully appreciate the progress of the case this test should be a quantitative one.

In selecting urine for examination it is necessary to procure both an evening and a morning specimen. It frequently occurs that sugar is only present directly after the taking into the body of carbohydrate foods. It is owing to the fact that specimens of urine are procured at different times and after different conditions of diet that physicians differ so often in the diagnosis of diabetes.

Among the various tests for sugar probably the most accurate is the copper test, in the form of Fehling's solution. The great objection is that this solution will throw down a precipitate on boiling, which is very liable to mask the test. In order to obviate this I have had pellets made of the solid ingredients of this solution, in an anhydrous form, such as can be at any time dissolved in water for use.

When patients come to us we should not ask them, but tell them, what they have been eating or drinking. This can be accurately done by the quantitative test. This is best and most easily accomplished by the decolorization test, which is done in the following way :

At the bottom of a long graduated pipette is attached a tube running into a flask containing a given quantity of a solution of sulphate of copper, differing from Fehling's solution only in containing ammonia and potash instead of the latter alone (in order to prevent the precipitation of the oxide); at the upper part of the flask is placed an escape-tube. At the rubber tube through which the urine escapes into the flask is placed a compressor controlled by a screw, which regulates perfectly the flow of the urine. After the copper solution is brought to a boiling point, by a flame placed underneath the flask, the urine is allowed to enter the flask, drop by drop, until the copper solution is exactly decolorized. By reading upon the graduated pipette the amount of the urine which has been necessary to decolorize the known quantity of copper solution, we can form a proportion by which an accurate estimate can be made of the contained sugar. By this means we can follow the course of the disease even more accurately than the clinician who, with his stethoscope, watches, from day to day, the progress or retrocession of pulmonary disease.

It is well to note, in passing, that in diabetes we sometimes find albumen in the urine, and this is often present just in proportion as the patient improves or gets worse. A test for albumen, which has no known fallacy, is that with citric acid and the ferrocyanide of sodium. The objection to the nitric-acid test is that it may precipitate either uric acid or the oleo-resins. In the above test, if a pellet of citric acid is dissolved in the urine and boiled, we may then get a precipitate of uric acid, but upon the addition of the ferrocyanide of sodium the solution invariably clears up unless albumen be present.

In considering the disease itself, we find it has different grades and intensity. The liver, in health, has not unlimited control in the assimilative power over the carbohydrates, and diabetes may be said to exist when that power is below the ordinary. When a person first comes to have diabetes, as we have stated, it is through faulty assimilation; it does occur, however, that as the disease progresses, the sugar is formed from the tissues themselves, as is proved by its constant presence when the patient is upon a strictly meat diet.

Age influences greatly the occurrence of the disease. Out of 1,360 cases tabulated, forty-five per cent. occurred between forty and sixty years of age. Age also affects prognosis; young subjects rarely recover, the disease ordinarily terminating in two years. In old people the prognosis is more favorable, many recovering. One reason, possibly, for the tendency of children to do badly, is that they take unsatisfactory care of themselves, while elderly persons are oppositely inclined.

In treating young subjects we must try merely to stay the disease; we cannot stop it. We take away the sugar, the patient temporarily improves, and believes himself cured. He is borne up only by false hopes.

In young subjects it seems to have a progressive character, not unlike progressive muscular atrophy, or of loco-motor ataxia.

For elderly patients we can do much. Appropriate diet is absolutely essential.

Dr. Herrick, of Cleveland, Ohio, asked whether Dr. Pavy considered the condition of the urine the objective point in the treatment, or did he aim his treatment directly to the abnormal condition in the portal and hepatic circulation.

Dr. Pavy said that he looked upon the lessening of sugar as an evidence that the assimilative power of the carbo-hydrate is improved The urine is an index of sugar plus the power within.

Dr. Truax, of New York, N. Y., asked if Dr. Pavy had found where acetic ether was present that death followed quicker.

Dr. Pavy replied that he was not a believer in acetonæmia.

Dr. Stockman read a paper for Dr. R. W. Phillips, of Edinburgh, Scotland, entitled

THE ETIOLOGY OF PHTHISIS.

He claimed that experiments go to show that ptomaines are the principal etiological factor in phthisis. In experiments where the ptomaines have been injected the animals give all the characteristic symptoms of phthisis, such as sweating, great depression, etc.

Dr. Phillips sent with his paper a tabulated report of experiments with injections of atropine, which he claims counteracts the action of the ptomaines.

Dr. Herrick, of Cleveland, Ohio, said that he believed that the deposits in the lung were excretions from the blood of material which the natural eliminatives were unable to dispose of. He did not believe the bacillus tuberculosis to be the cause of phthisis *ipso facto*.

Dr. Whitmarsh believed that a very large number of the race have tuberculosis; it often lies dormant, yet the germ is there, like fuel, only needing a match to set it on fire. The early stage of phthisis is curable, but unfortunately that stage is too often overlooked.

Professor Arnold, the President, thought that Koch still had the best side of the argument. The crucial experiment has been made, that when inoculations are made with sputa containing the bacillus tuberculosis, we get phthisis, but do not get phthisis under any other circumstances.

Dr. Truax, of New York, N. Y., called attention to the additional evidence of the power in the bacillus tuberculosis, viz., that repeated cultures of the germ still retain the power to cause phthisis.

The Secretary read a paper by Dr. W. B. Neftel, entitled

SOME CONSIDERATIONS ON THE PATHOGENESIS OF DISEASES OF WOMEN.

He endeavors to prove, by experiments upon the lower animals, that compression of the chest will cause phthisis. Although his experiments did not prove this, they did show that they would cause albuminuria, which he attributed to venous stasis.

From these experiments he made analogous comparisons of the deleterious effects of wearing corsets and high-heeled shoes.

He suggested that the Congress appoint a commission to investigate the various modes of feminine dress of the different nationalities, and select such forms as are both practical and useful. He thought that in this way, with the sanction of the profession, some impression might be made upon the female sex to change their present mode of dress.

Dr. Herrick thought that experiments upon the lower animals were of little use in forming opinions of disease in the human subject.

Dr. Price, New York, N. Y., agreed with Dr. Herrick in the main. He did not think that bacilli were the cause of phthisis.

Dr. Finlay, Mansfield, Ohio, asked if statistics showed that the difference in dress caused a corresponding increase of mortality among women.

Dr. John Ege, Reading, Pennsylvania, thought it very necessary that each air-cell should have free play in performing its function, otherwise it would be a favorable soil in which the bacillus could grow. He believes in the germ-theory of phthisis.

SECTION ON GENERAL SURGERY.

FOURTH DAY—MORNING SESSION.

Dr. Burney read for Dr. Richardson, of St.

Louis, Missouri, a report of a case of gastrotomy for the relief of foreign bodies in the throat. The speaker also mentioned a case in which he himself had operated, a man having swallowed an ordinary plated case-knife, which he presented at the meeting. While playing with his family the knife slipped from his fingers as he pretended to swallow it, and really did. The writer did not believe in the continued suture in this operation, but the interrupted, one and one-eighth of an inch apart.

In discussing Professor Dennis' paper, Dr. Myers remarked that MacEwen used only digital pressure in the amputation of the thigh-joint.

Professor MacLean, of Detroit, Michigan, said that Dr. Dennis' method was the principal point in the paper; he had had the best results in Lister's abdominal compressor.

Dr. Weeks, of Maine, stated that he used the ordinary rubber-bandage with a compress, the bandage being four thicknesses and secured much the same as Dr. Dennis'.

Dr. Manly, of New York, N. Y., thought it difficult to find anything to take the place of Lister's compressor.

Dr. Reyher, of St. Petersburg, Russia, said he had had some unpleasant experiences with Listerism. He was in the habit of first excising the head of the bone, then piercing the thigh and ligating in two parts, then amputating the legs; the flaps were then under the control of the surgeon, and he could work at leisure, but he usually put a rubber-bandage above.

Dr. N. Smith thought that the less tissue left the better, and that he was satisfied with Brodie's operation, the anterior and posterior skin-flaps; as for controlling hæmorrhage, the hands were best; he had not had much experience with the rectal staff.

Dr. Springler, of Dresden, Saxony, remarked that about one-fifth of these cases healed primarily; one-fifth in about three weeks, and one-fifth in about two to three years, and then perhaps would die from the amputation and the prolonged drain on the system.

In discussing aspiration of the hip-joint, Dr. Lange, of New York, stated he thought the conclusions on the subject were rather premature.

The question was asked if the fluid were examined under the microscope for bacilli; also whether the fluid was removed as a curative measure or only to relieve pain.

To the former question Mr. Owen replied it was not, and as to the latter it was both; replying that if you are in doubt as to these cases, put in your trocar and cannula; you can do no harm and may do good.

In regard to Dr. Garmody's paper, Dr. Burney stated he had a case of a boy whose skull was fractured, and who shortly afterward was taken with maniacal attacks of screaming epilepsy. He was trephined and two buttons of bone were removed; a second operation was performed and the dura mater incised, when immediately a large quantity of cerebro-spinal fluid gushed out, which very much alarmed the speaker; sponges were quickly placed in the cavity: subsequently the wound was sewed up. Since that time he has gradually improved.

Dr. Manley, of New York, N. Y., read a paper on a case of

GUN-SHOT WOUND OF THE LARGE INTESTINE, WITH A SUCCESSFUL RESULT BY LAPAROTOMY.

The patient was operated on twice. The speaker considered that opening of the peritoneal cavity of a man was far different to opening that of a woman, and liable to more risks; the breathing of a man is largely abdominal, while that of a women is almost entirely thoracic; the incision in the man should not be a bit larger than is necessary, because of his laborious work being liable to produce ventral hernia after recovery. For exploratory operations he made the median incision, but thought there might be exceptions to this rule. In regard to the drainage-tube in these gun-shot wounds of the abdomen, he thought there was no need of them when the peritoneal cavity was healthy and laparotomy was performed soon after the injury, and although he had put one in, in the case spoken of, he should not do it in the next one. Of course there might be exceptions, but he belived the tube was a source of irritation and more liable to produce hernia.

AFTERNOON SESSION.

Dr. Robert Newman, of New York, read a paper on

THE USE OF THE GALVANO-CAUTERY SOUND,

particularly in hypertrophy of the prostate gland, with report of cases. The frequency of the application of the cautery, he stated, would depend much on the condition of the patient, but it averaged about from every three to six days; the cautery was not to be red hot, but simply to show a bright light. The apparatus was exhibited to the section. The advantages claimed are that there is no hæmorrhage, the healing is more rapid, and there is no septicæmia. Out of these cases 91 per centum are made comfortable and given a new lease of life.

Dr. Carnochan, of New York, N. Y., presented a rare specimen of

BONY UNION OF THE NECK OF THE FEMUR WITHIN THE CAPSULE,

after fracture, occurring in a woman seventy years of age. As she had plenty of means she had every attention. She was kept in her fracture-bed for nine months, rest being the method of treatment. The value of the specimen was very great, especially in courts of law.

Dr. F. Lemoyne, of Pittsburg, Pennsylvania, presented some drawings of an united fracture of the femur, and history of a successful case in which he had applied his method of treatment, viz.,

DOUBLE SPLICE AND WIRED CLAMPS.

The treatment has been successful in three cases, two of the humerus and this one of the femur. The bone was cut down upon and the fragments found to be overlapping nearly three inches. The ends were sawed off, the upper fragment in the form of a wedge; from the lower one a wedge-shaped piece of bone was removed, so that the upper fragment fitted into it. A hole was drilled in both bones about one and a half inches from the fractured ends. A stiff, flat steel bar, with a prong at either end, was placed lengthwise on the surface of the bone, so that the prongs were inserted into the holes; a stout piece of wire was then passed around the clamp and femur at either end, and twisted close up, holding the clamp in position. The wires and clamp remained there nine weeks, when the wound was reopened and the clamp removed. The bone was firmly united, but the limb is two and a half inches shorter.

Dr. Manley, of New York, N. Y., stated that he had had considerable experience in wiring bones, and thought the bones when lapping very much should be wired at the first; he always left the wires in, as they did no harm. In one case of compound comminuted fracture he had followed this method and secured perfect union.

Dr. Lemoyne remarked, he thought that his method was original, everything else had failed in the case of one of those reported who had undergone a number of operations previously. In all of his cases so treated he had met with success; he did not believe in wiring in primary fractures.

Dr. Gibson exhibited some wire extension splints for fractures at or near the joints; he had used them since 1879. They were a modification of the wire splint of Dr. Nathan R. Smith.

Dr. Meyers remarked that he thought the day of extension, except in compound fractures, had gone by; he was very well satisfied with plaster-of-Paris board, or some simple and light dressing.

Dr. Gibson replied that he wished it understood that he did not use this splint in all cases, but for those fractures at or near the joints.

In discussing Dr. Manley's paper, Dr. Quimby, of Jersey City, New Jersey, stated he thought in many cases of wounds the tubes were left in too long. He quoted one case of laparotomy in which no tubes were introduced. Death followed the operation; the wound was reopened, and the peritoneal cavity found perfectly dry.

Dr. Manley concluded by saying that in ovariotomy, where substances were removed, it was different, but in gunshot wounds he considered the tubes injurious.

SECTION ON MILITARY AND NAVAL SURGERY AND MEDICINE.

FOURTH DAY—MORNING SESSION.

Dr. J. D. Bryant, of New York, N. Y., being absent, his paper entitled

ON THE CAUSES AND TREATMENT OF ERYSIPELAS, WAS READ BY TITLE.

A paper by Dr. William Varian, of Titusville, Pennsylvania, on the subject of

ETIOLOGY AND TREATMENT OF HOSPITAL GANGRENE DURING THE WAR,

then followed. The author enumerated the symptoms of this disease as observed by himself during the late war, and the causes which were probably concerned in its development. There may be certain atmospheric conditions, such as the prevalence of cold, wet weather, or hot moist weather, with marked electric or barometric oscillations. The influence of bad food, imperfect care, and mental depression acted, the speaker said, as predisposing cause. The probability of the presence in the atmosphere of some unknown septic poison was discussed at length. A necessary condition for the development of the disease is the existence of a solution of continuity of the cuticle or soft tissues generally; the same may be said of wounds in a state of suppuration and granulation; wounds not recent being, however, more likely to be attacked. Hospital gangrene is a local, and not a systemic, disease; it develops an auto-generative contagium, which may be spread by atmospheric diffusion, or may be conveyed from patient to patient by the surgeon's hands, instruments or dressings. That it is a local disease is attested by the fact that it may develop in only one wound upon an individual afflicted with a number of them; a few such cases were observed during the late war by others as well as by myself.

The subject of treatment was then entered upon. The futility of medicinal treatment was shown, and the complete destruction of the

tissues affected was, the author said, essential to successful treatment. These should be boldly removed by the knife, and some caustic thoroughly applied. Success is less dependent upon the nature of the latter than upon the thorough application. In his experience he had found bromine the surest, although the most disagreeable; but nitric acid and the acid nitrate of mercury had also been successfully used. The importance of a supporting treatment, of good food, stimulants, and tonics, to combat the great vital depressions which always co-exists was shown. In conclusion, the author remarked that strict asepsis should eliminate hospital gangrene from the surgery of the future.

Dr. Frederick Hyde, of Syracuse, New York, desired to know if the author had met with cases in which the disease had actually been communicated by unclean sponges and dressings; he had himself observed this in a number of instances. An affirmative answer was given.

Dr. Pickett, of Cory, Pennsylvania, related his personal experience with hospital gangrene; he had been treated by bromine and cured, but the disease had made such an impression upon him that he was still suffering.

The President, Professor Smith, asked one of the British members, Dr. Anderson, of the British army, what had been his experience with the disease. Dr. Anderson replied that he had never met with it in his hospital experience.

A paper on

THE ETIOLOGY AND TREATMENT OF CAMP DYSENTERY AND DIARRHŒA,

was read by Dr. Charles W. Buvinger, of Pittsburgh, Pennsylvania. Camp dysentery and diarrhœa are always the result of a radical change in the manner of living; by the use of bad water from stagnant pools or wells contaminated with organic matters. The use of improperly cooked food, and privations, were important factors. The speaker adverted to the influence of malarial or paludal neighborhoods and to that of scurvy in their causation.

The nature of these diseases is not well understood. They are not due to a micro-organism, bacteria, or a special bacillus, so far as known; in spite of numerous researches, we are still in the dark as regards their origin.

The history of the treatment of dysentery shows the diverse and discordant opinions entertained by authors regarding the use of ipecacuanha. No one remedy can be considered a specific for either of the diseases in question. The writer having been a great sufferer from both, briefly related his experience and experiments upon himself with various remedies.

He is convinced that fuming nitrous acid, 43%, as furnished by Powers & Weightman, of Philadelphia, is the best remedy that we have; it may be reinforced by opium, if necessary. His favorite formula is the following:

℞. Acidi nitrosi, 43%..... f ʒ j.
Tinct. opii..... f ʒ i j.
Aquæ destil..... f ʒ vi.
Syr. simpl..... f ʒ viij.

M. Sig—A tablespoonful in one wineglassful of water every three hours.

This remedy will afford relief in the majority of cases of dysentery and camp diarrhœa. Oil of turpentine is most valuable in the latter disease, especially in the hæmorrhagic form as well as in the chronic diarrhœa met with in private practice. The writer has for years used with success the following formula, which possesses the advantage of being pleasant to take, and is readily taken by children:

℞. Acaciæ pulv..... ʒ jss.
Ol. terebinth ..... f ʒ ij. ʒ ij.
Aquæ..... f ʒ iij.
Syr. simpl.....ad f ʒ xij.

M. Sig.—One teaspoonful every three hours to adults.

It will be noticed that this emulsion contains twenty drops to the drachm, a quantity which is less likely to cause strangury than a smaller dose. It may be reinforced by tr. opii, to prevent undue catharsis. The dose for children should, of course, be proportionate to their age. He had found this combination invaluable.

In camp diarrhœa, another efficient combination is the following, which will be found useful also in summer diarrhœa:

℞. Hydrarg. chlor. mit.....gr. ij.
Pulv. ipecac. .....gr. iij.
Opii .....gr. v.

M. et in chartulas No. X. divide.
Sig.—One every three hours.

The next paper was read by Dr. Joseph R. Smith, U. S. Army, upon

THE BEST FORM OF REPORT OF SICK AND WOUNDED OF ARMIES.

The object of such a report was described, and the form adopted by various European armies shown. Of these, that of the Prussian army is, in the opinion of the writer, the best. A model of a form suitable for all armies, designed by the author, was presented.

Five propositions were formulated for adoption by the section, the first stating the objects of report of medicine and surgery; the second the frequency and periodicity of the same; the third

recommending simplicity and uniformity; the fourth expressing preference for the Prussian system of classification; the fifth urging the adoption of the model form here presented, and directs the Secretary of the section to communicate their opinion to the medical bureau of all nations represented in the congress.

An essay by Dr. Chas. W. Brown, of Elmira, New York, upon

THE ETIOLOGY AND TREATMENT OF TETANUS

was read. The author began by saying that the cause of the disease is still enshrouded in doubt, but was more probably due to ascending neuritis than to the irritation of peripheral nerves. He considers the disease a specific, contagious, and infectious one, which, according to Rosenbach, is caused by a bacillus, his experiments having shown that rabbits and mice inoculated with material from a case of tetanus died of the disease. The author adverted to some experiments made by various observers upon the horse, and proceeded to compare a true case of the disease with one of cerebro-spinal meningitis, which, he thought, had often been mistaken for idiopathic tetanus; in fact, his experience and observation had cast a doubt in his mind as to the existence of such a disease as idiopathic tetanus, which was always the result of some wound, however slight. After an interesting account of a case met with in his practice he approached the subject of treatment, which he characterized, as a rule, as very unsatisfactory. The wound should be, if necessary, freely opened and cleansed with some antiseptic fluid, and dressed in accordance with the methods of modern asepsis. Isolation and rest in a dark room, free from air-currents, were of great importance. The removal of wounded parts has not given good results in traumatic tetanus. Supporting measures are indicated in the disease, and the intelligent use of stimulants. The use of concentrated foods was not to be overlooked.

Quinine had been in some cases, apparently, used to advantage, in enormous doses, some giving as much as two hundred and sixty grains in one dose. He had himself administered it in doses of one hundred grains every hour for some time; this case recovered, and no bad results followed from the injection of such a large quantity of the drug. Fowler's solution, cannabis indica, morphia, cocaine, the bromides, had in turn been tried in vain, although the latter, particularly bromide of potassium had been strongly recommended by Dr. McCord, of Kentucky, in twenty grain doses, every hour. The use of pounded ice and the ether spray along the spine should always be resorted to.

The President, Professor Smith, announced that the paper which had been promised upon

THE MICROBIC ORIGIN OF TETANUS,

by William Browning, M.D., of Brooklyn, New York, had not been received. He then called upon Dr. J. McF. Gaston, of Atlanta, Georgia, to open the discussion upon this interesting subject.

Dr. Gaston, at the outset, regretted exceedingly that the paper just mentioned had not been presented, as he had expected from it, and as a result of the author's experiments, the presentation of new data of a definite nature upon this subject. In the absence of any such data, and relying upon his own experience with the disease, the speaker's views were not in harmony with those of Dr. Browning, concerning its bacterial origin, contagious, or infectious nature. Professor N. Senn, of Milwaukee, in a recent lecture, appeared to take for granted the bacterial origin of tetanus, the author of the paper under discussion appeared to hold the same views, but has not eliminated the doubt which may exist in regard to this etiological factor. It is begging the question to claim that tetanus is due to bacilla, because a certain bacilius of a distinctive character has been found in the course of the disease, since such an organism may be a mere accompaniment or result, and have no causative influence whatever. Regarding the claim of contagiousness or infectiousness, chiefly based upon the synchronous or subsequent appearance of the disease in man or animal in the same locality, it should be considered that there may be certain predisposing atmospheric conditions in such locality which account for the occurrence of the disease without implying its infectious or contagious nature in the ordinary acceptation of the terms.

In the speaker's experience, suppurating wounds do not often cause tetanus. The disease may be due to the development of some ptomaine, but the question of its origin is still *subjudice*.

As for the treatment, the use of chloroform, and the thorough saturation of the system with chloral and potassium bromide offer the best chance of success. The speaker had observed eighteen cases of traumatic tetanus, treated in this manner, of which ten cases had recovered.

AFTERNOON SESSION.

The first paper of the session was read by Dr. J. W. S. Gouley, of New York, N. Y., on

THE PRACTICAL CONSIDERATION OF HUMAN NOSOGRAPHY.

The author first considered the importance of a correct and thorough nomenclature of dis-

eases, and the causes that had retarded the progress of this science. To be of practical utility, nosography should be established upon a sound basis. The defects in the past and present nomenclature of diseases were chiefly enumerated, and suggestions given for their remedy. The paper concluded with the presentation of propositions looking toward an improved classification of diseases.

Dr. Simeon Tucker Clarke, of Lockport, New York, spoke of the importance of this subject, and agreed, in the main, with the views of the author.

Dr. Harrison, of Washington, D. C., Dr. Didama, and Dr. Frederick Hyde, of Syracuse, New York, discussed the subject and presented their views relative to its importance.

Dr. Hingston, of Montreal, Canada, spoke of the necessity of such a revision as that proposed, and Dr. Bontecou, of Troy, New York, referred to the simplicity of the Prussian nomenclature of diseases, as compared with ours.

Dr. Gouley concluded the discussion by suggesting that co-operative movement was needed to reach the desired end of a perfect nomenclature.

The second paper, entitled,

WHAT CLASS OF GUN-SHOT WOUNDS AND INJURIES JUSTIFY RESECTION OR EXCISION IN MODERN WARFARE?

was read by the author, Dr. Reed Brockway Bontecou, of Troy, New York.

After a clear definition of the terms, the author entered upon a consideration of the value of operations as compared with the results of expectant treatment or amputation, referred to the advantages of excisions and their reduced mortality under the antiseptic method, and gave statistics of gun-shot wounds of cranium, clavicle, scapula, and shoulder-joint. The fractures of the hip-joint were next considered. The results of resections of lower extremities were not satisfactory with regard to their future usefulness. The condition demanding excision of the shaft of femur in gun-shot fractures were chiefly enumerated. In conclusion the author adverted to the favorable statistics of antiseptic treatment without operation, and to the encouraging results of resection of the knee-joint under the same method of treatment.

Professor H. E. Goodman, of Philadelphia, after few remarks upon the paper, reported some cases of resection of the femur after the battle of Chancellorsville, attended with fatal result.

Dr. Henry Janes, of Waterbury, Vermont, read an important paper, giving the results of his experience during the late war, with

GUN-SHOT FRACTURES OF THE FEMUR.

The author's conclusions upon this interesting subject are based upon the results of no less than 427 cases occurring in his service, and treated by himself, or under his immediate observation, in two field hospitals in his charge during the years 1862 and 1863.

Of these fractures 95 were in the upper third of the bone, all of which were treated conservatively, giving a mortality of forty-six per cent. at last reports; 125 were in the middle third, 102 of these being treated conservatively, with a mortality of thirty-two per cent.; 23 were amputated, mortality forty per cent.; 207 cases were in the lower third of the bone; 67 of these, not including knee-wounds, were treated by the conservative method, with a mortality of twenty per cent.; 140 cases were amputated, resulting in one of thirty-five per cent. Besides these 427 cases, there were 34 fractures involving the knee-joint, treated conservatively, with a mortality of eighty-five per cent. The cases requiring amputation terminated earliest, but about one-eighth of them suffered from painful and tedious osteitis. Up to about forty years of age, advance in life did not seem to increase the rate of mortality. The author's conclusions are the following:

Antero-posterior wounds did no better, in my experience, than the transverse. Fractures caused by bullets moving with great velocity were fraught with more danger than those at a lower rate of speed.

Wounds occurring in prisoners did not do so well as those in their captors under the same conditions; this was probably due to the incident moral influences.

Gun-shot fractures sometimes united as readily as simple fractures.

False joint occurred but once among the two hundred and sixty-three cases treated conservatively.

Secondary hæmorrhage occurred only in nine cases, several times incident to septic poisoning.

Tetanus only occurred once.

Hospital gangrene seemed to be induced in the autumn of 1863 by bad ventilation and the occurrence of cold, damp weather.

The shortening, in the cases which completely recovered was generally of more than one inch; it was, in several instances, increased by too early use of the limb.

The formation of callus was sometimes so irregular and excessive in amount as to impede muscular action; it sometimes encroached upon an artery or nerve, and caused secondary hæmorrhage or neuralgia. In some cases the callus was absorbed in the course of septic inflammation.

Refractures, caused by falls and similar accidents, generally reunited readily when the wounds in the soft parts were healed.

The limbs often became much more useful than any artificial substitute; the author has unfortunately no statistics bearing upon this subject to offer.

Regarding the treatment of injuries of this nature, he would enjoin the surgeon *not* to saw off the ends of fractured bones, and not to use too much force in tearing off fragments of bone still attached to the periosteum. Moderate, simple extension by weights and pulleys is the best in the majority of cases; in some of the cases that did the best no extension was used. He would advise the dry dressing of wounds, with plenty of absorbents rather than with water-dressings. Strict antisepsis, according to the modern idea, is impossible in large hospitals on the battle-field.

In conclusion, the author spoke of the necessity of a liberal diet, the intelligent use of stimulants, and due regard to the sanitary precautions in the camp or hospital in which this class of injuries are treated.

Dr. Robert Reyburn, of Washington, D. C., desired to know what proportion of Dr. Janes' cases had been treated in tents and in buildings.

Dr. Janes replied that the majority of cases were treated under canvas, with free access of air; with the advent of the cold and damp weather of winter the ventilation was not so perfect, as it was difficult to impress upon the soldiers the importance of free ventilation at a time when they were suffering from the cold. It was, as previously stated, at this time that hospital gangrene set in.

Dr. Reyburn said—In my experience the kind of hospital in which the wounds under consideration are treated has much to do with the mortality; the treatment in tents I consider the best; unfortunately, most of the cases observed by him in the service could not be treated under such favorable conditions, and he had to report a mortality of about seventy-five per cent. The results achieved by Dr. Janes were most remarkable, and show what can be done by conservative surgery.

SECTION ON OBSTERICS.

SEPTEMBER 8TH — FOURTH DAY — MORNING SESSION.

Professor Alexander R. Simpson, of Edinburgh, Scotland, occupied the chair.

Dr. Emil Poussie, of Paris, France, made a report of a case of

TYPHOID FEVER IN THE PUERPERAL WOMAN

Seven days after labor, grave symptoms of true typhoid fever appeared; the disease running its course and the patient recovering. The report was made to call attention to the importance of distinguishing typhoid in the puerpera, from septicæmia.

Professor Alexander R. Simpson called attention to the importance of distinguishing the various forms of puerperal fevers. In Edinburgh he saw many cases of typhoid after labor; these were sometimes difficult to differentiate from ordinary sepsis, sometimes distinct and with a clear history of sewage-infection. He had seen scarlatina and measles after delivery simulating septicæmia. These diseases in the puerperal woman were apt to prove fatal before their full development.

Professor Graily Hewitt, London, England, thought that the great advance in the treatment of puerperal fever in late years consisted in means tending to prevent the introduction of septic material into the blood. Women in whom the uterus did not remain firmly contracted were the most liable to contract puerperal fever. The uterus was the seat of entrance of the poison, and in private practice the best safeguard was to keep the uterus firmly contracted. Keep the patient in as good general health as possible during the latter months of pregnancy, feed her soon after labor and keep up her strength, for where there were weakness and debility the uterine contractions were apt to be imperfect. He used antiseptic precautions and vaginal injections, with the uterine douche in appropriate cases. When the germs had once gotten into the connective tissue about the uterus, douching did no good. He insisted upon the necessity of free passage for the return flow, and advocated Budin's double-tube, which he had had made of glass, as it was then more easily examined and kept clean. In general treatment keep up the uterine contractions by various means, nourish the patient, and use stimulants *freely*.

Dr. G. W. Jones, of Danville, Illinois, had never had a case of puerperal fever in his own practice. He is always careful regarding antisepsis, employing the mercuric bichloride, or oil of turpentine, which he considered an excellent antiseptic properly used. The uterine douche is a valuable agent.

Dr. William T. Stewart, of Philadelphia, Pennsylvania, read a paper on

THE IMPORTANCE OF ACCURATE DIAGNOSIS IN PREGNANCY, WITH THE HISTORY OF A UNIQUE CASE OF RETROFLEXION OF THE GRAVID UTERUS, LABOR AT TERM.

After some remarks on the causes and necessity of the numerous cases of abdominal sur-

gery, in which he expressed a hope for some better means of prevention of female diseases, he spoke of the evil effects of the modern steel-clad corset, which injured the muscles of the back, forced down the contents of the abdomen, and impeded the venous return. He reported a case showing many blunders in the way of mistaken diagnosis.

The patient, aged twenty-nine, one year after the birth of her third and last child consulted a female doctor, who told her that a tumor was growing in the posterior vaginal cul-de-sac. She consulted several other physicians, some of them famous gynecologists, who agreed as to the nature of the "fibroid" and decided upon operation. Two days before the proposed removal of the tumor Dr. Stewart chanced to see her, and found a retroverted pregnant uterus. He advised her not to undergo the operation, and, as she was not his patient, did nothing more. At full term he was called upon to deliver her, and found the uterus still retroverted. The vertex presented above the brim, the body lying posteriorly. The os was dilated, but nearly out of reach above the pubes. An attempt at reposition, made with the patient in the knee-chest position, was successful. At the first pain after the reposition the membranes were ruptured, and at the second the child was born, living; weight, six and a half pounds.

Only two similar cases were recorded, in both of which the child was dead.

Professor Alexander R. Simpson, of Edinburgh, Scotland, thought the case interesting, as it was extremely rare for a retroversion to persist to term.

Dr. Rodney Glisan, of Portland, Oregon, related the history of a case of retroversion of the gravid uterus, reduced in the knee-chest position at the fourth month, and followed by abortion. We should always insist upon a rectification, even to the fifth month.

Dr. Williams, of Baltimore, Maryland, related a case where a retroverted gravid uterus, with bilateral laceration of the cervix to the vaginal junction, simulated cancer with fibroid.

Professor John Bartlett, of Chicago, Illinois, presented a paper entitled

A STUDY OF DEVENTER'S METHOD OF DELIVERY OF THE AFTER-COMING HEAD,

supplementing the paper with a demonstration upon the phantom.

Deventer spoke in the most confident manner of the success and safety of podalic version, and of the ease with which the head could be delivered; but did not describe his method, which, however, Dr. Bartlett had found mentioned in Smellie's work. Deventer's method was shown to consist of a reversal of the so-called Prague method, in that the body of the child was carried far backward toward the perineum, with the view of turning the occiput out from under the pubes, the anterior surface of the neck resting on the perineum. At the beginning the occiput of the child was turned forward, so as to come under the pubes as the child was drawn down. The arms were *not* to be drawn down, but left up alongside the head, being placed so as to come anterior to either parietal base. The delivery by traction backward upon the body was to be aided by pressure made immediately above the pubes, the wedge formed by the head and arms being changed by the withdrawal of the larger transverse diameter of the head from between the arms, as descent of the head accompanied by extension occurs. The mechanism was only favorable when the occiput was anterior. Deventer never lost a child or tore a mother. The arms being left up protected the neck of the child and allowed a passage for the cord alongside of them, so that haste was not as necessary as with ordinary methods, and, occupying a broad and yielding part of the pelvis, they did not obstruct delivery. The method was a plausible one, and certainly worthy of trial in suitable cases.

Professor Simpson spoke of Deventer as one of the most reliable of obstetric writers; yet, as the method would seem to endanger the perineum, he would like to see a practical demonstration of its value.

Professor A. F. A. King, of Washington, D. C., considered Professor Bartlett's paper one of the best that had been presented to the section. In regard to the safety of the method, we must remember that the puerperal canal was elongated by the perineum, which he thought liable to be torn. However, he should describe the method in the next edition of his book.

Professor C. T. Parkes, of Chicago, Illinois, described two cases where he had had difficulty in getting down the arms, and where a decided pull backward had easily and unexpectedly delivered the head. He had not understood the matter until Professor Bartlett's paper had made it clear.

Dr. G. W. Jones, of Danville, Illinois, cited three similar cases where he had, without knowing it, used this method, with the patient on the side, the delivery being unexpectedly easy and the perineum intact in each case.

Dr. J. E. Kelly, of New York, read a paper entitled

LITHIASIS IN PREGNANCY.

Being impressed by the frequency, during gestation, of many of the arthritic, gastric, and other phenomena which ordinarily are present in lithiasis, the author reviews in detail the relations existing between the two conditions, and concludes that the association is due to the correspondence of the condition of the blood in lithiasis and pregnancy. First, considering the general pathology of lithiasis, and subsequently that of the various systems, he then investigates the phenomena of pregnancy, and indicates the influences which produce in the maternal blood a condition almost identical with that which is present in lithiasis, and draws a parallel between the diseased conditions most frequently observed in pregnancy and the symptoms of lithiasis. These investigations would suggest the careful supervision of the condition of the pregnant female, especially with regard to the digestive, circulatory and urinary symptoms, and, in suitable cases, the intelligent application of prophylaxis.

Dr. E. P. Christian, of Wyandotte, Michigan, read a statistical paper on

THE PROPORTION AND CAUSES OF STILL-BIRTHS.

The average for states and counties was about four per centum; for large cities, seven per centum. His personal statistics, in a small manufacturing town, were a little less than four and a half per centum in 1,675 labors, including 17 cases of twins.

Prominent among the causes of mortality were syphilis, intemperance and ergot.

Professor Alexander R. Simpson spoke of the value of such statistical researches, and of the labor they required. He strongly condemned ergot, given before the birth of the child, as being a most fruitful cause of still-births.

Drs. Dunmire, of Philadelphia, Pennsylvania; Pierce, of Ohio; Lester, of New York, N. Y.; Stewart, of Philadelphia, Pennsylvania; Robinson, of Danville, Virginia; and Sale, of Mississippi, united in condemning the use of ergot.

SECTION ON GYNÆCOLOGY.

SEPTEMBER 8TH — FOURTH DAY — MORNING SESSION.

Dr. Ephraim Cutter, of New York, N. Y., read a paper on

GALVINISM OF UTERINE FIBROIDS.

The paper was divided into Expectations, Realizations, Answers to Critics, Conclusions.

EXPECTATIONS.

August 21, 1886, the first American operation was performed, simply to arrest development of the fibroid. It was participated in by Dr. W. S. Stoveham, of Massachusetts (*American Journal of Obstetrics*, New York, February, 1887, 120).

Dr. Gilman Kimball was present, August 29, 1887, and operated the second time. "So far as the priority is concerned, I am willing to give it to him, for I will have no question of honor between him and me."

The idea of using common needles was scouted at once by their unsatisfactory performance. Dr. Kimball said he would have nothing to do with the operation unless better needles were provided. I invented one plated with gold and shaped like a corkscrew, which proved a useless device. The so-called Cutter needles were then produced. Whatever has been or may be said of them, they were satisfactory.

REALIZATIONS.

After sixteen years, besides the expected arrested development in a large majority of the cases, there have been: 1, entire cures; 2, great diminution of the growths; 3, relief from pain and hæmorrhages; 4, attention to the operation by the profession; 5, about four hundred cases of operation reported, besides many scores not reported; 6, the variation from galvanism to faradism, in the mode of application, in the batteries, in the duration of the application, in the kinds of electrodes, in the discovery of instruments for mensuration; 7, the operation has been widely published and has become pretty well known; 8, uterine fibroids are no longer opprobia medicina.

When the first operation was done there were no amperemeters; only voltameters, which are measures of electro-motive force. It is not claimed that the milliamperemeter cures; it only measures. I only object to the doctrine that no operation can be done without measurement, not to measurement itself.

APOSTOLI'S CRITICISMS.

I distinguish between him and his sayings; I know him for the work he has done, and reply to him in no spirit of malice.

CONCLUSIONS.

1. When an untried operation is purposed, it is not wise for those whose opinion is asked as experts to say it cannot be done.

2. Best to give all due credit for what they do.

3. In performing this operation use common sense, and not blindly follow any one's method unless indicated by the strongest signs.

4. Hereafter any physician who says uterine fibroids are hopelessly incurable is not sustained by the facts and evidence.

Dr. A. Lapthorn Smith, of Montreal, Canada, was sorry that Dr. Apostoli could not defend himself against the criticisms in the paper

of Dr. Cutter in the English language. Most uterine fibroids are situated posteriorly, and hence are easily reached and treated by negative galvano-puncture. I have been deluged with questions about this treatment since the reading of Dr. Apostoli's paper and my own. As to the question, Can fibroids be treated without puncture? I would refer you to Dr. Martin's paper, which was on this subject. Apostoli never dares to make an examination without first washing out the vagina with a bichloride solution (1 in 1,000, 2,000, or 3,000). He cures subinvolution, and with the positive galvano-cautery does away with dilatation in very many cases of dysmenorrhœa. Gentlemen who make their living by the removal of the ovaries will lose their occupations when electricity is more in vogue.

Dr. F. H. Martin, of Chicago Illinois, said he knew it to be impossible for Dr. Cutter to get any current at all through the battery described by him.

Dr. Kimball, of Lowell, Massachusetts, who was introduced by the president as a pioneer in the treatment of fibroid tumors by electricity, gave his experience.

Dr. Garrett, of Boston, Massachusetts, who was also introduced as a pioneer, gave his testimony regarding this treatment.

Dr. Apostoli, of Paris France, spoke in defense of his system. He wished to give Dr. Cutter all credit for his investigations; but now that we have the means of measuring electricity, a measurement made definite by the electrical congress of Paris, there is no excuse for using it hap-hazard and every one should use it rationally.

Dr. Smith, of Montreal, Canada, then said there were a hundred little details, which it is impossible to explain in the short time allowed.

Dr. Cutter asked Apostoli if he had cured any case so that the tumor had entirely disappeared.

Dr. Apostoli replied that he cures the cases symptomatically, the patient does not know any more that she has a tumor.

AFTERNOON SESSION.

Dr. August Martin, of Berlin, Germany, read a paper on

THE VAGINAL TOTAL EXTIRPATION OF THE UTERUS FOR CANCER.

Freund inaugurated the extirpation of the cancerous uterus ten years ago. Sufficient material is now at hand to decide the two following questions, which may legitimately be asked concerning every new method of surgical treatment:

1. Is this operation practicable with such immediate success that it promises good results in the hands of others than a few specially successful operators?

2. Does the extirpation of the cancerous uterus give permanent results which force us to recognize that this method is superior to any other treatment of cancer employed up to the present time?

In seeking an answer to the first, if we examine the literature, we are struck with the fact that only meagre and isolated reports about this operation can be found in English and German medical journals. Vaginal extirpation has obtained decided recognition in Germany. In this country the purely vaginal operation of Czerny and Billroth and Schroeder has been adopted instead of the procedure of Freund, which was a combination of abdominal and vaginal operations. The results of the same have improved noticeably with increasing exercise and experience.

In 1881 Olshausen collected 41 cases with twenty-nine per cent. mortality. In 1883 Sanger, 133 cases, twenty-eight per cent. mortality. In 1884 Engstrom, 157 cases, twenty-nine per cent. mortality. In 1886 Hegar, 257 cases, twenty-eight per cent. mortality.

Through the courtesy of these operators, who to my knowledge commanded the greatest amount of material, and, at my request, placed at my disposal the results up to the end of the year 1886, I am able to present the following:

Up to the end of 1886 these total extirpations have been performed on account of carcinoma uteri: Fritsch, 60 times with 7 deaths; Leopold, 42 times, 4 deaths; Olshausen, 47 times, 12 deaths; Schroeder (Hofmeir), 74 times, 12 deaths; Staude, 22 times, 1 death; A. Martin, 66 times, 11 deaths. Total, 311 cases with 47 deaths, or 15.1 per cent.

Are we not justified in assuming that this

RATE OF MORTALITY WILL DECREASE,

with more experience, as shown by the published tabular results of each of these operators? Already the total extirpation of the uterus for cancer shows better results, so far as immediate mortality is concerned, than removal of the breast for cancer.

For the latter, Kuster, at the twelfth meeting of the German Surgical Society, in 1883, published 778 cases with a mortality of 15.6 per cent. Who would hesitate to propose to perform the amputation of the cancerous breast so soon as the diagnosis is established?

I do not hesitate to answer my first question in the affirmative, and to claim for this operation of the vaginal total extirpation of the uterus a full

and equal rank among all methods for the treatment of cancer of this organ.

For an answer to the second we will make use of the relatively small, but very accurately reported cases of Schroeder, collected by Hofmeir, and those of Fritsch, Leopold and myself.

Table II. shows that the permanent results of vaginal total extirpation in this relatively short period of observation are no doubt equal to the best results of carcinoma operations of other organs.

The author up to the end of 1885 operated on 44 cases. Of these relapsed 18, or 29.7 per cent.; recovered, 31, or 70.3 per cent.

Is there any other method of treating cancer which with so small mortality can show equally good results? There is no other mode of treating cancer of the fundus and those forms of diseases of the cervix in which the mucous lining of the cervical canal is the point of origin, or in which there are carcinomatous nodules in the tissues of the neck. There is no room for discussion except in epithelioma of the portio vaginalis arising from the surface of the cervix, that is, from a surface covered with flat epithelium and containing very few glands.

I agree with Fritsch that the observation of cases of progress of the disease in isolated nodules in the mucous membrane up to the fundus, in cases of carcinoma colli, is sufficient in itself to show it is erroneous to claim that in carcinoma of the cervix we should try to save the body of the uterus. Binswanger and P. Ruge have described such well-marked cases.

The possibility of a subsequent pregnancy is not excluded in cases of high excision; but Hofmeir himself declares that pregnancy is a very serious danger in carcinoma. Therefore, I am convinced that it is much better to immediately perform vaginal total extirpation in these forms of epithelioma of the cervix. The sooner we operate the more surely we may hope to save our patients from the sad fate of death by cancer. The greater the experience with vaginal total extirpations the more has the rule been proved that we shall perform the operation only when the vicinity of the uterus is entirely free from carcinomatous infiltration. All attempts to enlarge the boundaries of the operation in this direction have failed.

The technique of the operation has undergone only immaterial changes, as is shown by the results of operators using different methods. It is irrelevant whether the uterus be removed by an incision made in front of, or at the side of the neck, or behind it. It is of little importance whether hæmorrhages be prevented by stitches introduced before the incision, or whether each separate vessel be seized and tied as it bleeds. It is immaterial whether the uterus be turned over or removed by drawing it down and freeing it, whether the opening in the floor of the pelvis remain open or be closed, or be drained either with the iodoform gauze or with a tube.

If it be easily practicable I advise that the ovaries and tubes be also removed. It is immaterial whether the wound be sutured or not. It is wonderful what little impression the operation makes on the patient. One can liken her very much to a puerperal woman.

Bleeding must be stopped, at all events during convalescence; the parts as much as possible kept at rest. Washing out the peritoneal cavity does not work favorably.

The papers of Drs. Martin and Jackson on "Hysterectomy for Uterine Cancer," were discussed.

Dr. Martin, of Berlin, Prussia, said: I am accustomed to prepare my patients for operation with the most thorough antiseptic vaginal injection. He then described most minutely his method of operating. He very frequently opens the Douglas pouch at one stroke of the knife. You then see the posterior fornix and cut carefully, paring with the finger-nail. When the peritoneum is opened I introduce one finger into the peritoneum and, having warm water running over the surface, do not use sponges. I suture the vagina to the peritoneum. When I have freed the broad ligament I cut it from the uterus and generally have no hæmorrhage. I then proceed in like manner on the other side, till I have the broad ligament severed there also. Up to this stage there is very immaterial hæmorrhage. I then commence on the bladder—freeing it with the forceps or the knife. After it is freed I unite the cut border of the vagina with the peritoneum, just as I did before. I am accustomed to put a drainage-tube into the peritoneum, consisting of india-rubber. I think it does good, although I must confess that I believe that a case which is not infected, should be closed up. Yet I have had such good results from this that I still use it. There are various gentlemen present who have seen me operate, and who can testify that I lose a very small amount of blood. Of course there are cases where a loss of blood is necessary from the existing conditions. The operation is yet new, it has only been done for six years, and I think we will improve on it very much.

Dr. D'Arnay, of Hungary, gave a history of his experience with twelve cases. Out of these twelve cases only two are now living, after a period of three or four years. As to the operation

he thought that the best we could do was to close the opening into the pelvis, and fill the vagina with iodoform gauze, and let the patient alone. As to Dr. Jackson, he thought he was on the wrong road with his statistics. Statistics deal only with quantity, not with quality. If there are one hundred persons on a ship, possibly I can save only one of them. Should I not save this one? Certainly. Patients suffering with cancer of the uterus are shipwrecked persons, and sure to die a most painful death. We can save a number of our patients, and those who die usually die in a short time, and comparatively comfortable deaths. Humanity demands of us that we do the operation of vaginal hysterectomy in all cases in which we can remove all of the diseased tissue.

Dr. A. P. Dudley, of New York, N. Y., wished to enter a plea for vaginal hysterectomy for uterine cancer in America, and point out why the operation had been less successful here than in Germany. Martin had sixty-six cases, with eleven deaths. In a paper read by me, some time since, I reported sixty-six cases with thirty-four deaths. These sixty-six cases, however, were divided between thirty-four operators, and here lies the difficulty. Experience is a good teacher, and practice makes perfect. The child must creep before it can walk, and the surgeon must have a fair trial, especially in America. As in the case of ovariotomy, which originated in America, our surgeons are almost flocking to Europe to learn how it is done. The amount of pain and suffering in the death of the patient is one of the points which should induce us to try this operation.

Dr. Nunn, of Savannah, Georgia, said that there was always a starting point to cancer. It is generally due to neglect of fissures or some other irritant, arising consequent to parturition In my own practice I have my patients report to me occasionally after delivery, and see that they take care of themselves properly, and I have not had a case of cancer in my own patients.

Professor Graily Hewitt, of London, England, said that the whole civilized world, and the uncivilized too, are under obligations to Dr. Martin and his colleagues for their work in this line, having advanced the operation to its present state. In a discussion in the London Obstetrical. Society, a few years ago, I was the only one who refrained from condemning the operation. I think it should be done in properly selected cases, by gentlemen of experience.

Professor A. Reeves Jackson, of Chicago, Illinois, thought it wrong to attempt to reason against facts, as well as difficult. His paper was based on facts founded on the results of Gusserow, Paget and such men. These gentlemen had estimated the duration of life, in those women suffering from uterine cancer, to be twenty-one months as an average. If this be true, then my calclation as to the duration of life will not be denied. The average duration of life of women operated upon is fourteen months; this difference in the aggregate amounts to nearly three hundred years of grand total loss of life. Does anybody allege that it has saved life? Dr. Martin claims that the operation should be done only when the disease is limited to the uterus. How does he know the case was limited to the uterus? Because it did not return? Baker, of this country, by his high operation, has sixty per centum of recoveries, which is far better than Martin's.

Dr. Martin replied that he knew that a cancer was limited to an organ by its having a layer of entirely healthy tissue around it.

SECTION ON THERAPEUTICS AND MATERIA MEDICA.

Fourth Day.

A paper on

THE CHEMISTRY AND PHARMACOLOGY OF THE NITRITES AND OF NITRO-GLYCERINE,

by George Armstrong Atkinson, M. B. C. M.' was presented, and in the absence of the author, was read by Dr. Ralph Stockman, of Edinburg, Scotland.

The action of the salts of nitrous acid resembles closely those of the acid which is the essential basis of this group of medicinal agents. Nitrous acid is remarkably unstable; in watery solution of $\frac{1}{3000}$ it may be used for a day or two for experimentation, but it has no advantage over a solution of nitrite of sodium, which possesses identical effects in so far as an acid can be considered identical with one of its salts. Our knowledge of the action of the nitrite group has been chiefly derived from a study of the effects produced by nitrite of amyl. Since here the base (amyl) has a decided action of its own, it is necessary to select a salt in which the base in its combination possesses no well-marked physiological activity. The resemblance between the action of sodium nitrite and amyl nitrite has been pointed out by Gamgee, Lauder-Brunton, Hay, Leech, and others. Barth described its highly poisonous qualities. Binz showed that it caused death from general paralysis, especially of the muscular system, no convulsions preceeding the fatal issue. Reichert considered it iden-

tical in its toxic effects with potassium nitrite. Its effects may be summed up as a paralyzer of muscular tissue, non-striated muscle being affected less quickly than striated. The brain centers are also affected. The blood becomes of a chocolate color in mammals (methæmoglobin), respirations are slowed, temperature slightly lowered. Death occurs in frogs from cessation of respiration; after the heart has stopped its movements, it is found in full diastole and quite inexcitable.

Post-mortem rigidity comes on early. In rabbits, three grains were a fatal dose in one three pounds in weight. The same appearances were found post-mortem. In man, small doses (eight grains) produced great tendency to faintness and considerable acceleration of pulse, and decided lowering of arterial tension. Paralysis of respiration is due to the effect of the nitrite on the muscular system chiefly, but also in part to the effect on the medullary centre. Small doses slightly increase the flow of urine; large always diminish it. Urea and uric acid are almost unaffected. Sugar appears in the urine of rabbits after some hours, if the animal be kept very decidedly under the influence of the drug; but rapidly disappears if the administration of the drug be stopped. The nitrite is largely destroyed in the system, being partly, however, excreted as nitrate, partly, probably, as urea; a portion of it is excreted as nitrite.

The pharmacology of the other nitrite is briefly dismissed. Nitrite of potassium, nitrite of ethyl, nitrite of amyl act in very similar manner to the sodium salt. Nitro-glycerine acts partly as a nitrite, and partly *per se*. In small doses it exerts the nitrite effect as a paralyzer: in large doses it produces convulsions.

Dr. Murrell, of London, England, referred to his discovery of the usefulness of nitrite of amyl in the condition of angina pectoris, and he always advised patients to carry the medicine in a small bottle. The pearls he considered too expensive for use. The tabellæ (Ch. B.) of nitro-glycerine, made with chocolate, he considered dangerous from their resemblance to confections. He had used nitro-glycerine in one per cent. solution (dose m. v–xv) in cases of neuralgia of the fifth nerve, surgical shock, asthma (spasmodic and cardiac), and reflex neuroses. He preferred this in epilepsy to the nitrite of sodium, which had been recommended by Dr. Law. In angina, patients can take fifteen minims when they feel the attack coming on; such patients should carry a small bottle with them for immediate use when they feel the attack coming on, otherwise they might perish before the agent could be obtained. He gave an amusing instance of the difficulty of obtaining nitro-glycerine in England at present.

Dr. Upshur, of Richmond, Virginia, reported a case in which the inhalation of nitrite of amyl, in a patient suffering with heart failure and puerperal septicæmia, undoubtedly saved life by cautiously continuing the remedy, whenever there was a failure of the pulse, for about forty-eight hours, when it was withdrawn and diffusible stimulants substituted.

Dr. Wade, of Holly, Michigan, prefers a ten per centum alcoholic solution of the amyl nitrite, which he uses by inhalation. He regards it as the best form of cardiac stimulant in sudden emergencies.

Dr. Phillips, of London, England, had experienced headache, dizziness, and faintness after taking five minims of a one per centum solution of nitro-glycerine hypodermically. He had found the tabellæ (each m j. of a one per centum solution) useful in angina pectoris. Patients usually will not tolerate more than three or four of these, but some will require twenty-five or thirty. The effect of sodium nitrite is more prolonged than for the ethereal nitrites, and for this reason he prefers to give it in dyspnœa attending bronchitis.

Dr. Brackett, of Washington, D. C., reported a case of successful treatment of an epileptic by the use of amyl nitrite by inhalation.

Dr. Wade, of Holly, Michigan, recommended nitro-glycerine in cases of threatened local asphyxia of brain from embolism or thrombosis; he had had good results.

Dr. Phillips, in answer to a question, said that he would regard fifteen minims of solution of nitro-glycerine, hypodermically given, as a dangerous dose.

Dr. Murrell thought that there was no advantage to be derived from its hypodermic use, since it acts so quickly when swallowed.

The next paper was

ON THE POISON OF THE COBRA,

by Dr. Julius Gnezda, of Berlin. The substance upon which the experiments were made was brought from India by Dr. Kobert Koch. It was obtained by making the cobras strike some shells covered by sheepskin. The poison was afterward dried. It is soluble in water, but not in alcohol or ether; its activity is lost by boiling. It is uniformly poisonous to higher animals. The European hedgehog and the ordinary swine of this country are popularly believed to enjoy an immunity, but this is explained by mechanical obstacles to absorption in these cases. The poison is contained in an albuminous fluid, but

its chemical construction is not as yet settled. It is poisonous when applied to mucous surfaces, without causing blisters.

The effect is very marked when the poison is injected into the circulation. The blood-pressure is at first increased, the blood-corpuscles are changed in their shape, and the spectrum of the blood is characteristic. It was found that death did not occur at once, but after about half an hour and as the result of failure of respiration, so that the Indian Government was induced to recommend artificial respiration in such cases. At present, no antidote is generally accepted. Since it is not known whether the poison is an alkaloid, a ptomaine, or other body, such a question is at present only a speculation. As it is secreted by salivary glands, it is probably an albuminous body. Permanganate of potash has not been found an efficient antidote.

Dr. Phillips, of London, England, regarded the paper as an interesting contribution to our knowledge of the characteristics of snake-poison.

Dr. Lewin, of Berlin, Prussia, could not harmonize the report made of the spectroscopic appearance with the usual characters of the blood-spectrum. The appearance was peculiar, and needed further investigation. With regard to the antidote, it may be acknowledged that there can be no general antidote to counteract the poison after it gets into the system; but if the remedy can be injected *locally* into the wounds, then potassium permanganate and a number of agents having a caustic effect may neutralize or destroy it.

Professor F. Woodbury, of Philadelphia, Pennsylvania, said that in regard to the nature of the poison, Drs. Mitchell and Reichart, of Philadelphia, had conducted a series of experiments which seemed to establish the fact that the snake-poison is not a single substance, but is probably composed of two, one of which is of the nature of a peptone. In the "Life of Francis Buckland," the English naturalist, the incident is given of Mr. Buckland having been inoculated with a very minute portion of the virus, accidentally, under his finger nail. He shortly afterward suffered with intense pain at the back of his head, faintness, and collapse, from which he recovered with difficulty after taking large doses of ammonia and brandy. He attributed his recovery to the antidotal effects of these agents. We may conclude that when a minute amount has been absorbed, ammonia and alcohol are antidotal, but where any considerable amount is received into the circulation the case is hopeless.

Professor Trail Green said that he had made some experiments with snake poison, and had been surprised by the quickness of the effects on a rat which had been bitten over the jugular vein. Death was instantaneous where the poison entered the blood directly.

Dr. L. Lewin, of Berlin, Prussia, read a paper

ON THE MAXIMAL DOSES OF DRUGS.

Of the many difficulties against which pharmacotherapy has to strive, the dosage of medicine is by no means the least. Variation in dose arises

(1) From the differences (*a*) between one person and another; (*b*) between single individuals at different times; (*c*) between the intensity of the disease in men suffering with the same affection; (*d*) between diseases in which the same drug is used.

(2) From the variability in the activity of the greater part of our remedies.

At the same time it is possible and desirable to establish the usual dose of agents which are active in relatively small quantity, and which readily produce toxic effects when the dose is increased. Two groups of preparations fall under this head: (1) Plants (crude) and plant-products, and their pharmaceutical representatives; and (2) chemical substances such as metalloids, metallic salts, and carbon-compounds.

The first group is almost universally inconstant in its effects, and thus far an international agreement as to their maximal doses has not been possible. The remedies of the second group, on the contrary, are nearly uniform, and the doses beyond which they cannot be given without danger can be determined by physiological experiment; but although the basis for such agreement is tolerably broad, yet the statements given in different pharmacopœias in many cases vary greatly. Such variations can be easily explained in the case of the first group, but becomes incomprehensible in the second.

From the results of his own observation and a comparison of the most of the pharmocopœias which give maximal doses, the author had constructed a table of the ordinary maximal doses of many of the drugs belonging to the second group, which he appended to this communication. Such a list should be added to the pharmacopœias of such countries as have have no maximal dosage, for the convenience of the practitioner, who thus would be enabled to prescribe such drugs with confidence even if they should not be generally used in his own country. From this Congress he hoped the influence would go out which would make such an international agreement possible.

Professor F. Woodbury, Philadelphia, Penn-

sylvania, instanced the varying effect from chloral hydrate, which is sometimes taken safely in large doses, and at other times it proves rapidly fatal, even in doses of ten grains. He inquired if this effect could be due to the coincidence of digestion and the change of chloral into chloroform by the alkaline bile, as Liebig believed.

Dr. Stockman, Edinburgh, Scotland, said that the amount of chloroform liberated from ten or fifteen grains of chloral hydrate would be so small as to be trifling. He thought that it was not decomposed, but that it acted as chloral hydrate. A good deal of dissatisfaction has been felt with chloral on account of its depressing action, and other agents such as hypnone and urethan, have lately been introduced to take its place.

Dr. H. G. Beyer, U. S. Navy, said that Mayer had explained the action of chloral hydrate as that of trichloracetic acid ; and, in fact, all other halogen derivatives of organic compounds produce their effects by the chlorine which they contain, which is said to be set free whenever these compounds are brought into an acid medium. For instance, the cells of the cerebrum are supposed to react slightly acid during intellectual activity, but when trichloracetate of sodium is injected into the blood, the chemical compound is decomposed, chlorine is set free, and sleep produced, or intellectual torpor, in the same manner as this is done by chloral hydrate.

Dr. John N. Uphen, of Richmond, Virginia, read a paper entitled

THE EMMENAGOGUE ACTION OF THE MANGANESE PREPARATIONS.

The usefulness of potassium permanganate when used as a deodorizer and disinfectant is based upon its readiness to part with its oxygen. Its mode of action is not clear, but in small doses internally it acts like iron, improves the general nutrition, and causes an increased and easier flow of blood at the menstrual period. The permanganate of potassium and the oxide of manganese are both used, the latter being more acceptable to the stomach than the former. It is given in gelatine-coated pills (gr. j. to ij. after meals), and to get its full effect it must be given before three successive periods. In amenorrhœa due to an impoverished and cachectic condition of the blood, oxide of manganese, given in combination with some form of iron, will undoubtedly prove of benefit. It is also useful where the condition is due to defective nervous or vascular supply when pain is present, due to fuctional disorder; also when *no* obstruction exists, but the endometrium is in a state of chronic congestion, or affected by inflammation due to obstruction which has been removed ; in all cases of vicarious menstruation ; in amenorrhœa of plethora and obesity ; *in fine, when the menstrual derangement is due to functional and not mechanical or obstructive cause.* Especially had he found it advantageous in membranous dysmenorrhœa. An interesting case was reported in illustration of the latter class.

Dr. DeWitt Clinton Wade, of Holly, Michigan, read a brief communication on a

FORMULA FOR OFFICINAL DILUTE HYDROBROMIC ACID (U. S. P.).

In 1874 he had first made the acid by the reaction of tartaric acid upon potassium bromide; and in 1875 had published a paper recommending its use in therapeutics. It was made officinal in the last revision of the United States Pharmacopœia, but the product is very variable by the official process. He recommends the following for making a standard ten per centum.

SOLUTION OF HYDROBROMIC ACID.

Bromide of potassium, four (*Avoir*) ounces; tartaric acid, five (*Avoir*) ounces ; water, seven (fluid) ounces. Dissolve the salt in the water and add the acid. When thoroughly mixed set aside in the cold for the precipitation of the acid tartrate of potassium. Decant the supernatant fluid and dilute with sixteen fluid ounces of water. The result is a ten per centum solution, by weight, of hydrobromic acid.

SECTION ON ANATOMY.

FOURTH DAY—MORNING SESSION.

The first paper presented was entitled

THE FUNDAMENTAL ANATOMICO-MECHANICAL CONSIDERATIONS UNDERLYING THE SUCCESSFUL TREATMENT OF DEFORMITIES, DISEASE AND WEAKNESS OF THE SPINE,

by Milton Josiah Roberts, M. D., etc., of New York, N. Y. He had began by saying that he had spared no time, labor, nor expense in studying this subject thoroughly, by testing all known methods, and felt that he could offer his results with some satisfaction to the Section. The corsets for the arrest of Pott's disease and other spinal troubles were made of a fine wire thread which was carefully woven over a plaster cast of the patient's body, so as to secure an exact adaptation. The great problems to be solved were —how and where to get hold of the body to support it without irritation, and how best to apply any remedies necessary. These problems, he thought, were simply mechanical. Bone should be the supporting point. He spoke of the great

advantage of these wire corsets over the heavy and clumsy Plaster-of Paris jackets. He thought there was a great want of proper description of how to apply these apparatuses on the part of writers and lecturers. He mentioned, also, the ease with which these wire jackets followed the chest-walls during respiration. He had found no brace so good for the support of the head as the one that went over the head. He showed several specimens of Pott's disease and other spinal deformities, and also photographs, drawings and models.

Dr. William J. Herdmann, of Ann Arbor, Michigan, spoke of the great advantage of Dr. Roberts' wire jackets over the old plaster jackets, and insisted that such apyaratus could only be applied by one thoroughly interested in the subject and ingenious and skillful.

Dr. Max J. Stern, of Philadelphia, Pennsylvania, then presented a specimen of

AN ANOMALOUS MIDDLE THYROID ARTERY,

the knowledge of which was of surgical importance in tracheotomy. He thought it was the first of its kind made public.

Dr. Herdmann had seen several such anomalies, and thought it not uncommon; but had never published his cases.

AFTERNOON SESSION.

Dr. W. X. Sudduth, of Philadelphia, Pennsylvania, then read a paper on

DEVELOPMENT OF BONE,

in which, after defining the terms ossification-bone and osteoblast, he laid down as the result of his study of developing bone that the white blood-corpuscles were the basis of all the connective-tissue group. He emphasized the point that the osteoblast did not become calcified. In the process of calcification the secretion took place around and not in the cell, the calco-spherules joined, and solid bone was formed. This deposit of bone-salts took place in the interstitial protoplasm. As the ossification began, the first deposit of bone was at the periphery of the system, and as it approached the centre it was self-limiting. As calcification progressed the osteoblast decreased in size and its envelope grew thicker. He quoted several authorities and their definition of the different kinds of bone according to their development. His own definition of bone was that it was an aggregation or conglomeration of calco-spherules. His own division of bone according to its development was:

(1) Interestitial; (2) intermembraneous; (3) subperiosteal; (4) intercartilaginous.

By interstitial bone he ment those bones which were not formed in cartilage and in which ossification took place prior to birth. The paper was illustrated by many microscopical specimens of developing bone, which were beautifully stained and mounted.

Dr. N. Stamm, of Fremont, Ohio, then read a paper entitled

ANATOMICAL POINTS OF VALUE IN THE DIAGNOSIS AND TREATMENT OF SOME OF THE JOINT AFFECTIONS.

He first described the anatomy of the synovial sac and proceeded to speak of some of the inflammatory and tubercular affections of the joints, confining his remarks to the knee and ankle-joints. He reviewed the etiology, pathology, and bibliography of the subject and then laid down the rules of treatment, the basis of which was rest and fixation.

Dr. Benjamin Lee, of Philadelphia, Pennsylvania, then read a paper entitled

CASE OF DEFORMITY OF THE SPINAL COLUMN PRODUCED BY MATERNAL IMPRESSION ON THE FŒTUS,

in which he related a case of cyphosis supposed to have been caused by maternal impression.

In the discussion which followed, Dr. Joseph N. Dickson, of Pittsburg, Pennsylvania, and several others were of the opinion that many cases occurred in which the maternal impression had no visible effect upon the fœtus, and thought that if statistics of all such cases could be collected a small proportion would be found to be so affected.

SECTION ON PATHOLOGY.

FOURTH DAY.

Dr. Leopold Servais, of Antwerp, Belgium, reported two successful cases of

REMOVAL OF THE SUPERIOR MAXILLA

for cancerous tumors.

Dr. Jackson, of Norfolk, Virginia, read a paper on

THE NATURAL AGENCIES EXHIBITING THE LIFE-PROCESSES OF PATHOLOGICAL ORGANISMS.

Professor N. S. Davis, Jr., of Chicago, read a paper on

CELLULAR PATHOLOGY—ITS UTILITY IN PATHOLOGICAL PROCESSES.

The author briefly referred to the views of Metchnikoff on intra-cellular digestion, and the illustrations of this process given by him and J. Bland Sutton.

He called attention to the fact that there is probably a cellular digestion in addition to the

intra-cellular. By the former term he described the process which takes place when dead bone is removed or eroded by leucocytes, granulation-cells, etc. Under such circumstances, undoubtedly the living cells are the active factors in removing the bone, and there is no evidence of the occurrence of intra-cellular digestion. The removal is accomplished by a similar digestive process, but the cell acts by contact with the digestible body, not by first swallowing it. Digestion by cells in pathological processes was illustrated by the so-called absorption of extravasated blood, of fibrin in thrombi and in deposits, in croupous pneumonia, of cells killed by the exciters of inflammation of various kinds, of bone and various foreign bodies that are soluble in the living tissues but not in the liquids of the body.

Such powers of digestion were ascribed to the leucocytes and connective tissue cells and granulation cells, and probably to some tumor cells.

Metchnikoff's view, that leucocytes are the natural adversaries of micro-organisms, was referred to, but the assertion made that only in certain cases was it shown that leucocytes were inimical to bacteria. They are, however, the undoubted removers of dead micro-organisms, and probably by processes of intra-cellular digestion.

We possess no knowledge of the exact chemical changes that take place in these processes. Some facts are pointed to that show the predilection of leucocytes for peptone. The suggestion was made that possibly this was the form in which they required their nourishment.

SECTION ON DISEASES OF CHILDREN.

Fourth Day—Afternoon Session.

Professor Albert R. Leeds, of Hoboken, New Jersey, read a paper on

THE NUTRITION OF INFANTS.

He had undertaken to find a true basis for the preparation of artificial food by analyzing eighty samples of human milk. He found that human milk differs from cow's milk chiefly in the proportion and digestibility of the caseine, which is smaller in quantity and more easily digestible in human than in cow's milk. He belived that he had solved the problem by digesting the caseine by a peptogenic powder, easily obtainable and of constant strength, which, with the aid of heat, reduced the caseine in five minutes. Before this cooking, the milk had been first diluted with water in order to lessen the proportion of caseine, and then had been enriched by the addition of cream to restore the normal proportion of fat. The results of a very large number of trials, followed by careful observation, encouraged the belief that by this process the artificial feeding of infants had nearly reached perfection.

A paper by Professor D'Espine, of Geneva, Switzerland, entitled

OBSERVATIONS ON TRUE OR LOBAR PNEUMONIA IN CHILDREN,

was then read by Dr. Cordes, of Geneva. The object of the paper was to maintain that there exists in children a special form of true pneumonia, which may be called central, from its location; congestive, from the violence of the inflammatory symptoms; and abortive, when its duration does not exceed two or three days. It is found in the interior of the upper lobe, and in its upper part. As the physical signs are detected with difficulty it may easily be mistaken for some disease which has the same train of general symptoms. The microscopic examination of the sputa reveals the presence of the micro-organisms commonly found associated with pneumonia.

A fatal termination is the exception, and when it occurs is generally the result of complications. The writer detailed cases in which death had been preceded in some cases by gangrene, and in others by gray hepatization. The best form of treatment is that which has for its object the reduction of the inflammation. Tepid baths, the compresses of Priessnitz, and similar methods of combating general and local heat are to be used. This treatment is alone reliable when there is high fever with cerebral symptoms.

Dr. Henry Ashby, of Manchester, England, then read a paper entitled

SCARLATINAL NEPHRITIS FROM A CLINICAL AND PATHOLOGICAL STANDPOINT.

The paper presented the results of his own observations in the wards and dead-house of Pendlebury Hospital for Sick Children, where fifteen hundred cases of the disease had been received in the past eight years. The disease has been observed in three forms: (1) An early or initial form, not especially important when compared with the others, and (2) a variety dependent on septic changes which leaves traces in the kidneys discoverable by the microscope. It occurs in the second and third weeks. In most cases this septic inflammation of the kidneys gives no symptoms distinguishable from those of general septicæmia. It does not extend so widely in the tissues of the kidneys as to impair their functions seriously. The urine is not diminished, and general œdema and uræmic symptoms are absent. (3) Post scarlatinal nephritis, or the nephritis of convalescence, far surpasses the

other forms in interest and importance. It occurs in an apparently well or rapidly convales cing child, and is the last and often fatal assault of a disease which has been almost subdued. It occurs from the sixteenth to the twenty-fourth day. The kidneys, after this form of scarlatina, like the lungs in measles, are weakened by their efforts to elminate poison, and are more readily affected by fibrinous or croupous inflammation. In hospital practice, at least, cases of mild scarlatina are less liable than severe cases to be followed by nephritis, which ranges in severity from cases which might easily be overlooked to those in which the uræmic symptoms are sudden and alarming. The earliest and most characteristic signs are diminished urine and puffiness of the face, which may appear several days before albumen is detected. The amount of albumen and its specific gravity vary greatly in different cases. The urine continues to diminish in quantity, and œdema of the face sets in, with vomiting and other uræmic symptoms, when suddenly a crisis like that of pneumonia takes place, large quanties of smoky urine of low specific gravity passes, and the patient is convalescing again.

A paper on the

ANATOMICAL CHARACTERS OF SCARLATINAL NEPHRITIS,

was then read by Dr. Frank Grauer of New York, N. Y.

The writer reviewed the post-mortem renal conditions in the initial catarrhal nephritis of scarlatina, and those which are found in the large flabby hæmorrhagic kidney, which belongs to septic inflammation. But he had more particularly studied post-scarlatinal or Klebs' acute glomerulo-nephritis, his observations being based on nine cases of this affection. The gross and microscopical appearances were described in detail. The kidneys were enlarged and hyperæmic, with the cortex unchanged or sometimes thickened and the glomeruli prominent. With a low power the glomeruli are larger than normal, and with a higher power apparently bloodless.

Although he had noticed swelling and proliferation of the glomerular epithelium he did not agree with the opinion of some that the capillary circulation is obstructed through compression of the capillaries by this proliferation, because in all the specimens which he had examined the loops of the capillaries were larger as a rule than normal, showing that the pressure was from within not from without.

He believed that the capillary obstruction is due to proliferation and thickening of the endothelial cells. The hypertrophy of the left ventricle, noticed in all his cases, was due (1) to the presence of some toxic element in the blood, and (2) to obstruction of the circulation in the Malpighian bodies, which compelled the left side of the heart to do more work.

He suggested that the term glomerulo-nephritis ought to be limited to those affections in which there is an obliteration of the loops of the capillaries in the Malpighian bodies, and not applied to those affections in which there is only proliferation and desquamation of the glomerular and capsular epithelium, which are common to all forms of chronic nephritis.

SECTION ON OPHTHALMOLOGY.

FOURTH DAY—MORNING SESSION.

At the opening of the session, Dr. X. Galezowski, of Paris, France, read a paper entitled

THE CURABILITY OF DETACHMENT OF THE RETINA.

He stated that the pathology of the disease is not entirely clear.

The writer had observed in twenty years, among 152,000 persons, 789 detachments, of which 87 were in both eyes, 62 in emmetropic and hypermetropic eyes, and 194 were traumatic; 13 occurred after extraction of cataract, 18 were syphilitic, and 4 in sympathetic affections. Tumor was found in 10 cases. Twice only he found detachment in retinitis albuminurica, although he frequently saw this affection. Cataract is very frequent in detachment of the retina.

Occasionally tearing of the retina is noticed, with the corpus vitreum introduced behind the retina, between the choroid and retina. He could say that the rupture of the retina is not so frequent, and considers it the consequence and not the cause of the detachment. Professor Von Graefe has said that the detachment is not curable, and the function of the retina is not restored. Dr. Galezowski had seen a case which showed alterations in the retina at the place of detachment, which had been completely cured. The patient gave the usual history of trouble with the vision, coming on suddenly and continuing for one or two or three months, with afterward recovery of sight. He explained the appearance of the fundus as seen by the ophthalmoscope, and illustrated them on the blackboard.

The conditions predisposing to detachment were said to be (1) choroiditis; (2) liquefaction of the corpus vitreum. In treating these cases he begins with antiphlogistic treatment, atropia, rest, etc., and he had in seven cases a complete cure—the retina completely adherent, and around the line of the separation atrophy, with pigment

deposit and choroiditis disseminata. The first indication is antiphlogistics; to apply every month two, three, four, or five leeches, then atropine, and warm and cold compresses alternately, and in the intervals between the leeches he applies derivative plasters. Inside of five months he has completely cured detachment of the retina. Mercury and potassism iodide are also useful where exudation is present or in cases of constitutional disease.

Fifteen years ago he proposed iridectomy to stop the inflammation of the choroid, but it did no good in that way, although it stopped the iritis. Now he proposes a new operation. He considers the exudation behind the retina as being of the same character as the effusion in pleuritis or peritonitis, and has had an instrument which he exhibited made to aspirate the fluid. The instrument is a syringe with a stop-cock and an aspirating-needle. He introduces the needle through the sclerotic at a considerable distance behind the ciliary body, and passes it into the globe for some distance. Then he exhausts the air by drawing out the piston. If the needle-point is too far in, no fluid appears in the barrel of the syringe, but on withdrawing the needle gradually the fluid appears, and one, one and a half, and two gramms, is generally obtained. There is no inflammation after the operation. By this means two out of seventeen cases operated on were completely cured, and there is a certainty of amelioration in all cases.

In old cases he introduces a curved needle from behind forward through the sclera and the detached retina, before introducing the aspirating-needle, and when the fluid is drawn off a catgut ligature is drawn through as a seton and brought tight.

Dr. Abadie, of Paris, France, spoke on the causation of detachment in myopes, setting forth the gradual stretching of the sclerotic in staphyloma and its drawing away from the retina as a cause of the detachment, with remarks on treatment.

Professor P. D. Keyser, of Philadelphia, spoke of Von Graefe's method of tearing the retina through the detachment with a needle of De Wecker's trocar, and of the double-needle method. He had never been able to get a permanently good result, although the immediate effect was sometimes very pleasing. He thought well of Dr. Galezowski's instrument, but wished to know how it would act in old cases.

Mr. J. Richardson Cross, of Bristol, England, said that there was no doubt that the subject was an exceedingly difficult one. He had treated a case with diaphoretics, had pushed pilocarpine, and used the other commonly accepted means of relief, with no change till now. He had done sclerotomy in three eyes, two in one girl. One, in a woman, did no good.

Dr. E. Landolt, of Paris, France, recognized three kinds of detachments. The first is due to choroidal exudation; the second, detachment in myopia; and the third, traumatic detachments. For the first, the treatment is perfect rest and compress dressing. He quoted a case which was cured and had remained well for three years. In the second class surgical interference may be justifiable, because there is scarcely any hope of restoration of vision in the part affected. He illustrated by a diagram his mode of operating with a Graefe knife, and remarked on the possibility of sucking out vitreous if the syringe was employed. For the third variety, traumatic detachments, there were no general rules. Some are restored with simple rest, and others resist all treatment.

Professor E. Smith, of Detroit, Michigan, had been struck with the remarks of Doctor Abadie. In his first case he introduced an acupuncture needle, and the immediate result was brilliant; but the permanent improvement was *nil*. He preferred to do the operation suggested by Dr. Wolf, of Scotland, and would hope to get up adhesions to tie the retina down to the wound. Doctor Galezowski's operation looks rational, if he does not puncture the retina.

Dr. W. F. Holcombe, of New York, N. Y., remarked that he presumed Dr. Galezowski, when he spoke of a cure, probably did not mean complete restoration of vision, but only reduction of the detached portion, and its restoration to its original plane. He also described Sichel's operation.

Professor D. S. Reynolds, of Louisville, Kentucky, wished to know whether it were a fact in the eye as in other organs, that frequent tapping is followed by increased accumulation.

Professor A. W. Calhoun, of Atlanta, Georgia, wished to know what advantage is to be obtained by operating in cases of this kind of long standing. The eyes are blind, and vision is not restored, and the operation may set up inflammatory action. He had done sclerotomy many times, but without satisfaction.

Mr. H. Power, of London, England, found it difficult to understand how there could be restoration of vision in these cases of detachment. The pigment layer is detached from the retina and left behind, and does not re-attach itself again as before. He believed there might be an apparent restoration where the detached portion had hung down over the good part like a bag,

and after reduction of the detachment there was an apparent improvement in that part of the retina.

Dr. Galezowski remarked, in closing, that he had only done the operation in bad cases. If it had been done in all cases, we might get a better percentage of favorable results. An antiseptic might be injected into the cavity. It is possible for the retina to resume its function of vision, but even if it were not, the arrest of the process and saving the rest of the vision is of value.

Dr. J. A. S. Grant (Bey), of Cairo, Egypt, then read a paper contributed by Dr. Brugsch (Bey), of Cairo, who was not able to be present, on

THE PREDISPOSITION TO GLAUCOMA.

He said that increased tension, the recognized test-symptom of glaucoma, might be produced in two ways, either by increased secretion, or by retention of the secretion, when normal in amount. He was inclined to think that the theory of retention was, at least in some cases, the one which appeared reasonable. It was a question whether eyes with small corneæ were more liable to be affected, and he gave some statistics which seemed to point in that direction.

The predisposition of the Semitic race to glaucoma is remarkable. In other races it occurs in the proportion of one to one hundred, here the proportion is four to one hundred. He had been surprised by finding children affected with glaucoma. The cornea of the pure Egyptian is decidedly smaller than that of other races, and he had been endeavoring to find whether the whole globe was also smaller, but his researches had been hindered by the trying climate, which produced decomposition in fresh eyes so rapidly. After iridectomy there appears to be a relaxation, and even an enlargement, of the corneal circle, as you can see if you notice that the coloboma will sometimes appreciably enlarge a considerable time after the operation.

AFTERNOON SESSION.

Professor A. G. Sinclair, of Memphis, Tennessee, reported

A CASE OF RETINAL GLIOMA ON BOTH SIDES.

A young child was brought to him with the history that some time before it was noticed not to see well, and soon appeared to be blind; then a white and somewhat lumpy appearance was observed in the pupil. Soon afterwards black lines were noticed over the surface of this appearance, the retinal vessels. On examining the eye Dr. Sinclair found congestion of the conjunctival and episcleral vessels, pupil slightly dilated, tension somewhat above normal. The same appearance was observed in both eyes, except that the left cornea appeared somewhat abraded in the center. Enucleation was proposed and was consented to. The right eye was removed together with about one half-inch of the optic nerve, and the left eye and the whole contents of the orbit, as far as possible without cauterization.

A careful and complete pathological examination of the right eye was made by Dr. T. Mitchell Prudden, who reported it as a *glio-sarcoma*.

The left eye and its appendages were examined by Dr. Carl Heitzmann, of New York, and his report gave the same conclusion. These two examinations and reports were made each without any knowledge of the other.

The case has now been observed for six years since the operation, and there appear to be no signs of the return of the disease, and the child is perfectly healthy. No heredity was discovered.

Professor Keyser, of Philadelphia, remarked that in cases of this sort he was doubtful if the child would live more than eighteen months or two years. One case of his had lived seven years, and one died in eighteen months after operation of glioma of the brain. He was doubtful if the successes were cases of true glioma.

Mr. Henry Power, of London, England, expressed the same doubt, although he has had some successes also.

Dr. Galezowski, of Paris, has operated for the removal of this disease, and one recovered and was afterward healthy. He had only seen four cases.

Professor D. S. Reynolds said that he thought it is a malignant proliferation conveyed through the lymph-channels. When it originates in the retina he saw no reason for its not being successful. He had had a case where he had enucleated both eyes, which were invaded simultaneously and equally. There was immunity for ten years.

A propos of Dr. Reynold's remarks as to the origin of glioma, whether in the optic nerve or retina, Dr. R. L. Randolph, of Baltimore, Maryland, remarked, that in a microscopic examination of a gliomatous eye very recently, he found the optic nerve-fibers pressed apart by the growth, which latter extended up to the severed end of the nerve. The whole optic nerve tissue was disorganized and, so to speak, monopolized by the growth. He inferred that the growth must have had its origin in the optic nerve.

Dr. H. C. Paddock, of New York, N. Y., read the next paper, entitled

ERGOT OF RYE IN OPHTHALAMIC PRACTICE.

No mention is made of this remedy in the earliest works on medicine, and even until very lately it has been considered to be a medicine for the obstetrician alone, and only to be good to stimulate contraction in the uterine muscle. The action of ergot is to promote contraction of the blood-vessels, as well in other organs and tissues as in the uterus, and especially in the blood-vessels of the eye. Soelberg Wells, in his work mentions it as a valuable remedy in congestions, episcleritis, etc., while Hammond says it possesses the property of contracting unstriped muscular fiber. It is certain that it does diminish the caliber of the vessels, and has a good effect in obstinate affections. It is a rational remedy, and nothing more is claimed for it than its general therapeutic properties. He gave a few cases in which it had seemed to exert a markedly beneficial effect.

In the case of a woman with conjunctival congestion and pain and discomfort, the whole trouble was stopped on the third day. In still another case, twenty-five years of age, there was conjunctivitis, iritis, retinitis, and ciliary neuralgia. Under ordinary treatment she improved for four or five weeks and then came to a stand still. She was then given ergot, and was discharged cured in a few weeks. In regard to the use of ergot, he begged to remark that it is a reliable drug, that it must be used in maximum doses and for several days, and that it is a good tonic; that atropia should be used in iritis, and reliance on general treatment for any complication that may arise, was advocated.

Mr. Henry Power, of London, England, then read a paper written by Mr. P. H. Mules, of Manchester, England, who was unavoidably absent, entitled

EVISCERATION AND THE ARTIFICIAL VITREOUS.

The object of the paper was stated to be to lay before the section the results of an operation which was intended to produce an improved appearance over the result in evisceration alone, with a clean cavity free from muco-pus. The mode of shrinkage after evisceration was discussed, and a blackboard demonstration of the method of operation given. The incision is made through the conjunctiva around the cornea, elliptical with its long axis horizontal. The conjunctiva is dissected back for a short distance, and an elliptical incision made through the sclera of about the same size and in the same position as that in the conjunctiva. The contents of the globe are then carefully cleared out, which is easily determined by the view of the white sclerotic in the interior of the eye. The glass ball is then introduced, the edges of the scleral wound carefully fitted together over the ball, care being taken to have no tension at the point of union, united by sutures, and the conjunctiva then brought together and sutured. There may be considerable reaction and some pain, which is treated in the usual manner. Mr. Power had done the operation about a dozen times, and had had three bad results. One suppurated, and in two the wound yielded and the glass globe was pushed out. Catgut sutures are used.

Mr. Cross, of Bristol, England, thought Mr. Mules' operation would be a permanent one. The shield over such a globe has a better motion than any artificial eye on a natural stump can have, because the muscles have been placed in a position more nearly corresponding to that in the natural eye. It does not make any difference whether one use a glass globe or a silver, or, as has been lately, a celluloid one. An advantage of this operation is that the lower lid is preserved, and is not gradually obliterated so that the shell cannot be retained. It cannot be said that Mules' operation will prevent sympathetic ophthalmia, because we cannot entirely clean out the globe. There may be affection of the lymphatics exterior to the globe already before evisceration, and it is, of course, impossible to reach them in this operation. Mules' operation is not to be compared with enucleation in sympathetic ophthalmia. We operate in sympathetic ophthalmia to save the other eye. It is not a question of appearance, but of sight.

Dr. Galezowski, of Paris, France, would divide the question into two parts—evisceration and the introduction of the glass ball. He saw this first fourteen years ago, with Professor Richet, in Paris. Great inflammation resulted, and it was not possible to introduce the glass ball. Enucleation was done six months after and the patient got well. He saw another case four months ago. Six months previous a good operation had been done, but a sinus had formed in the region of the wound. Treatment with antiphlogistics, antiseptics, etc., was of no avail. Enucleation was done and all was well. One year is not long enough for a final conclusion in the matter of result. In sympathetic ophthalmia there must be danger if we leave the smallest piece in the eye, and the enucleation must be completely and carefully performed, so as to leave none of the sclerotic attached to the nerve.

Dr. Baker, of Cleveland, Ohio, as an illustration of the ability to retain a foreign body in the eyeball with impunity, related a case which had oocurred to him. A man had his eye burned

severely with sulphuric acid, so that an unsightly ball was left, with no cornea. He put in a glass button like a collar-button, and the man had been wearing it comfortably ever since.

Professor Keyser, of Philadelphia, Pennsylvania, stated that he would try Dr. Mules' method. He had had very severe inflammation occur after evisceration. To illustrate the danger of sympathetic ophthalmia, when enucleation is not effectually performed, he related a case where a small button of sclerotic was left on the divided nerve. He advised to get it all out, but it was not thought worth while, and sympathetic ophthalmia set in. He believed it was better to do evisceration early.

Dr. Dibble, of St. Louis, Missouri, had seen two cases of bony deposit inside the sclerotic, and believed that in such a case the pressure of the glass ball would produce irritation and perhaps sympathetic trouble.

Professor E. Smith, of Detroit, Michigan, had seen Dr. Power do one of these operations, and and although Dr. Power had predicted considerable chemosis and severe reaction, there was no trouble whatever, and a happy healing resulted. There was not a bad symptom. He laid stress upon the fact that the edges of the cut sclerotic should just meet, not overlap or strain.

Dr. R. L. Randolph, of Baltimore, Maryland, read a paper contributed by Dr. H. Gifford, of Omaha, Nebraska, entitled

FURTHER CONTRIBUTIONS TO THE STUDY OF SYMPATHETIC OPHTHALMIA.

It related to the posterior lymph-stream, and detailed the results of experiments with injections of India-ink and anthrax. The course of the injections was ascertained by examining the eyes at periods after injection, and it was found that, even in neurectomized eyes, the coloring matters or anthrax bacilli had reached the brain from the posterior chamber; even where the cerebral end of the cut nerve contained none, showing that there is a current from the posterior part of the eye back to the brain, independent of the channels of the optic nerves.

Mr. J. Richardson Cross, of Bristol, England, next contributed a paper entitled

RETINOSCOPY; IT PROMISES A RAPID AND RELIABLE METHOD OF ESTIMATING ERRORS OF REFRACTION, AND IS A TEST OF THE GREATEST PRACTICAL VALUE

He stated that the full correction of the refractive error is not the one that is always most likely to be accepted by the patient, when determined by the upright or direct image method. With trial glasses it is often necessary to use atropine, but in retinoscopy he has only found it necessary to use atropine in cases of spasms of accommodation. In all other cases cocaine is quite sufficient. Either the plane or the concave mirror may be used. The production of the image at the far point of the eye in myopia is the important unit in the question of retinoscopy. The shadow observed in myopia is that of the erect image projected from the observed eye. With illumination, no movement, and no shadow, the observer must be near the conjugate focus of the rays. It is a usual thing to have one constant point to calculate from and work from, and the usual standard of a little over a metre is objectionable, because it is necessary to get up and approach the patient to make every change of glasses. Dr. Cross could use an optometer made by Doyne, which he exhibited, at a distance of eighty centimetres, which obviated the necessity of moving with each change of the patient's glass. Mr. Cooper has brought out a somewhat more complicated optometer, by which you are enabled to sit at the full distance and turn the disk.

The proper point to estimate the refraction in the patient's eye is the macula, but it is not easy; the disk is easier, but not so accurate on account of the occurrence of the physiological cup so often. The writer preferred to take a point midway between the two, which could easily be done by making the patient look at the other side of the face.

The results of retinoscopy are quite satisfactory; unsatisfactory in only about ten per centum.

The differences between the result with and without atropia are slight in degree, in a spherical direction, and do not exist as to the cylindrical correction. A much higher degree of latent hypermetropia is uncovered by retinoscopy than by trial lenses.

Professors Keyser and Reynolds rose to questions of information as to the abolition of the accommodation in the use of the method, and

Dr. Galezowski stated that he liked the method, but did not like the name. He believed the shadow to be produced by the changes in the cornea, and that the proper name is keratoscopy, An advantage is that one can make a diagnosis of the reflection without atropia.

Dr. Galezowski's assistant, Dr. Parent, had described it very accurately, and used the name keratoscopy. In proof of its being the shadow in the cornea, the best diagnosis of staphyloma of the cornea could be made by this method.

There is no reason at all for the term pupiloscopy.

Dr. A. R. Baker, of Cleveland, Ohio, also read a paper on

RETINOSCOPY.

Although retinoscopy has been extensively employed by general practitioners and specialists in England and France, it has been almost entirely ingnored by German and American practitioners. While many competent observers have written extolling the method, no less an authority than Professor Hirschberg, of Berlin, remarked in a laughing manner, when the writer asked his opinion of the value of retinoscopy, "Oh, that is a lazy English method, and don't amount to much." And Dr. Loring, in his excellent work, thinks that it does "nothing which cannot be more easily and more expeditiously performed by the upright image."

Probably one reason for the rejection of this method by Professor Hirschberg and Dr. Loring, is their extreme accuracy in the use of the ophthalmoscope. But this accuracy was, he believed, limited to only a very few, and it required a large amount of clinical material to become proficient, and few, if any, master the ophthalmoscope sufficiently under forty years of age to become proficient.

In teaching the method it is better to select an emmetropic eye for the first, and dilate the pupil. A concave is more convenient than a plane mirror. If the plane mirror is used it is to be remembered that the image will move against the mirror in myopia and with it in hypermetropia, and the reverse with a concave mirror.

Professor S. M. Burnett, of Washington, D. C., proposed the name scioscopy. He prefers the plane mirror.

Professor A. W. Calhoun, of Atlanta, Georgia, wished to know if all cases were corrected by this method so that they did not come back dissatisfied.

Mr. Cross, in closing, stated that retinoscopy was a name in general use now, and therefore it was better not to change it. He thought he would continue to use it. It certainly was not dependent on the view of the cornea, and he certainly never should call it keratoscopy.

SECTION ON OTOLOGY.

FOURTH DAY.

Professor E. DeRossi, of Rome, Italy, read a paper on

RESEARCHES ON THE MICRO-ORGANISMS IN THE EUSTACHIAN TUBE OF HEALTHY INDIVIDUALS.

When it was established that there existed in the saliva and in the follicles of the tonsils of healthy men indisputable evidence of the presence of pathogenic micro-organisms, and especially of the presence of the coccus pyogeneus aureus, it seemed to me desirable to undertake certain experiments to ascertain whether or not there existed micro-organisms in the eustachian tube; and if so, to ascertain their peculiarities. I fully realized the difficulties of obtaining positive and indisputable results. I assure you, however, that I have taken all the necessary precautions; that I have observed all the indispensable minutiæ which present scientific observations exact.

The method of procedure has been as follows: A fine platinum wire was fastened into a silver catheter. This wire was of such a length that it could be projected from the tubal end of the eustachian catheter to the distance of one centimetre. The terminal end of the platinum wire was bent so as to form a loop in order to retain a sufficient quantity of the mucus collected from the inside of the eustachian tube.

Before sterilizing the instrument with the usual care the wire was withdrawn into the interior of the sound, then the tubal extremity was sealed with a thin coating of celloidine and every catheter so prepared was placed in the sterilizing tube.

In introducing the catheter it was passed as far as possible into the mouth of the eustachian tube, and by pressing on the proximal end of the platinum wire the thin coating of celloidine was broken and the looped end of the platinum wire projected to the distance previously determined. It was then withdrawn to the inside of the catheter. The loop of the platinum was immediately employed for the culture plates of gelatine, and later the colonies which were developed were cultivated in tubes.

The experiments were begun on the 12th of April, with the assistance of Professor Guarner, of the Institution of Pathological Anatomy in Rome. In that institution, through the kindness of Professor Marchiafava, all the necessary appliances were at our service.

The mucus was taken from the eustachian tubes of twelve persons at different times between the 12th and 30th of April. From each loop of wire two attenuations were used for plate culture. Positive results were obtained only from six of the cases—six out of twelve.

Case 2 gave two successful cultivations. The planting took place on the 22d of April, and by the 1st of May the colonies were developed. In the plantings from cases 1, 7, 8, 9, and 10 the colonies were well developed on the 3d of May. The plates belonging to the other cases remained free from organisms.

The examination of the colonies developed presented the following features:

Plate No. 2 in the first attenuation, the colonies were of a yellow color, and the surrounding gelatine was fluid. Examined under the microscope it revealed the streptococcus. Further from both the first and second cultivations a colony which was of a white color was developed which revealed under the microscope the grape form, staphylococus.

Plate 1 exhibited two colonies, one gray, the gelatine remaining solid; the other white, the gelatine liquifying. Under the microscope the white colony revealed torules; and the gray colony, with the gelatine unchanged, gave the streptococcus.

Plate 7 presented a round colony of a yellow color, the gelatine fluid. The microscope demonstrated the presence of short rods (bacilli) of a length varying from 0 mm to 1 mm and 0.5 mm thick.

Plate 8 gave two colonies, one round and of a yellow color; the other yellow, but irregular in form. In neither of these cases did the gelatine become fluid. The microscope revealed a staphyloccus from 1 to 1.5 mm long.

Plate 9 revealed a colony irregular in form and liquid gelatine. It was composed of filaments of different lengths; some from 10 to 12 mm, and others 1 mm long. The thickness varying from 0.5 to 0.7 mm.

Plate 10 revealed a colony of a yellow color and the surrounding gelatine fluid. It was composed of rods (bacilli) from 1 to 3 mm long and from 0.6 to 0.8 mm thick.

From all these colonies pure cultures were made in gelatine tubes and their identity established after the culture. Cultures were also made on potatoes; and finally from both the cultures in gelatine and the potato, transplantations were made to animal tissues.

It would be useless here to detail the individual cases. Experiments were made in the peritoneum and subcutaneous tissue in the rabbit and guinea pig, but in no case was any pathological development manifest. We are not to infer from this that in the mucus of the eustachian tube there never exists pathogenic organisms. It is necessary to investigate, and I present to the congress these notes as an interesting study worthy of being pursued.

Professor G. E. Frothingham said he had listened to Professor De Rossi's very interesting paper, presenting the result of his original researches in a field that had not been before investigated in this manner. The result of the investigations is such as confirms views he had for some time held from simple empirical observation. He had already expressed these views, and his reasons for them, and would not now repeat When he had declared these views, he had no knowledge of any investigation in this direction. It is peculiarly gratifying, when scientific discovery harmonizes with facts learned, empirically, as did Koch's discovery, that cholera bacilli cannot live in acid solutions, harmonize with the fact observed years ago, in the Pennsylvania Almshouse, that the use of sulphuric acid lemonade would sometimes prevent the spread of epidemic cholera. We cannot say the result is negative, because Professor De Rossi discovered no pathogenic organism. He thinks the presence of these organisms in great numbers, whether pathogenic or not, serves to irritate the membrane, and, under certain conditions of atmospheric change, and of the constitution of the patient, will lead to inflammatory action, acute or chronic. We should not forget this effect, since, in respiration of contaminated air, such vast numbers of germs may be lodged upon the nasopharyngeal spaces, and thus reach the ear.

If it be urged that *these* are not pathogenic, who can say under what circumstances they may not become so? The virus of syphilis, or gonorrhœa, is not pathogenic for some individuals; exerimentors have bathed their eyes for hours with the secretion of Egyptian ophthalmia, and after exposure to wind and dust, for some hours afterwards, had suffered no attack. He thinks no one now knows nearly all the conditions that determine the question, as to whether certain of these germs are always harmless. Investigation must be made to decide this.

As the etiology of certain chronic diseases of the middle ear are so obscure, and the treatment of them so unsatisfactory, that it constitutes a reproach to otology, it becomes us to hail with welcome every carefully conducted scientific investigation in this direction. Professor De Rossi is a pioneer, has done good work, and is entitled to our thanks.

Dr. R. Tilley thinks it interesting to observe how different listeners get consolation and encouragement. While the previous speaker derived encouragement from the paper read in support of his views of the pathological influence of these organisms, I, on the other hand, derived encouragement from the paper in support of the idea, that the influence of certain organisms is, at present, greatly over-estimated. I am glad the observations have been made and reported to us, notwithstanding their negative results, even after the germs were introduced into the peritoneal cavity and into the subcutaneous tissue.

Dr. A. B. Thrasher, Cincinnati, Ohio. I am much pleased to learn of the admirable researches

of Professor De Rossi in this direction. That he has found bacteria in this region only accentuates what we have heretofore pretty well known, viz.: that all mucous membranes in contact with the external air contain bacteria. But these micro-organisms are by no means all pathogenetic. It appears to me that we are especially indebted to Professor De Rossi for his endeavors to discover which are the pathogenetic germs in this region. When the pathogenetic bacteria, or bacilli, have been certainly recognized, then can we say that we have made some satisfactory advance in this direction.

Dr. H. Gradle, Chicago, Illinois, remarked that the admirable researches of Professor De Rossi showed us an analogy between the eustachian tube and other mucous passages like the fallopian tubes, in which Fraenkel had found several pathogenic micro-organisms; or the mouth, in which numerous, harmless and virulent bacteria are known to exist. In otology it is necessary to distinguish accurately between exciting and predisposing conditions. The only exciting causes of suppuration are some micro-organisms, and occasionally chemical irritants.

If "taking cold," that is to say, temporary foreign circulatory disturbances, be accounted a cause of sudden inflammation of the middle ear, it is really an influence only which permits the bacteria, already present in the tube, but yet outside of the tissues, to multiply and enter the tissues and produce disease. Similarly, the presence of these bacteria in the tube explain why a nasal douche can, at times, produce acute inflammation of the middle ear, by conveying infectious material into the ear. Water, alone, could not give rise to such consequences.

Dr. Leartus Connor, Detroit, Michigan, stated that he is pleased to know a new method for the study of aural diseases. In normal conditions, we find that the bacteria cause no harm; it becomes important to study bacteria under such additional conditions as result in actual disease, and then we shall have light of added value.

Professor De Rossi, in closing, said "while the experiments I have narrated gave negative results, yet it is quite possible that under the depressing influence of cold draughts, or other causes, these organisms may contribute the determining influence which may result in some of those outbursts of inflammatory trouble, which sometimes come on so unexpectedly."

Dr. S. O. Richey, of Washington, D. C., then read a paper, entitled:

IS GENERAL ATROPHY OF THE CONDUCTING APPARATUS OF THE EAR IDENTICAL WITH PROGRESSIVE ARTHRITIS DEFORMANS?

The name General Atrophy of the Conducting Apparatus may not be better than the numerous other names by which this affection is designated, but it has the merit of describing the the result of the process as we see it, instead of indicating it by some particularity of its course. Some attempt will be made to show its probable neurotic origin in the spinal system by its similarity to a more general affection, which has been supposed to find its source there.

Atrophic degeneration of the conducting apparatus of the ear may not be, to any great extent, inflammatory in any part of its course is *not* "pre-eminently local in its character" *is* influenced by constitutional dyscrasia, probably begins at the cervico-spinal nervous centres, and is propogated through the sympathetic nervous system, or the sensory spinal nerves, interfering with local trophic action.

Many pathological changes have been observed in the cavity of the middle ear at its examination after death, but we are not assured thereby that any given structural variation has been a result of this affection alone, as we are denied the opportunity of observing it during the progress of the disease. For many reasons, we must think it has a broader pathogenesis than that usually accredited to it, in the exposition of which we may be aided by the processes of analogy and induction.

Garrod says of Progressive Arthritis Deformans (Reynold's System of Medicine, Vol. 1, p. 555). "It is much easier to prove what rheuma-"toid arthritis is *not*, than to give the slightest "clue to what it is. * * * * ; it appears to "result from a peculiar form of malnutrition of "the joint textures, *an inflammatory action with* "defective power * * * * ; it usually oc-"curs in weakened subjects, and exposure to "cold in many cases is the exciting cause of its "development." Weber (Jour., M. & N. Dis., Vol. VIII, 1883, p, 630) considers it of neurotic origin. In its entire history, except in the functional peculiarities of the locality attacked, it is almost a complete analogue of atrophy of the middle ear; in causation, symptoms, progress, and therapeutics. It would be an advantage to study the process as we can not in the ear.

Herewith is a parallel of the two affections:

PROGRESSIVE ARTHRITIS DEFORMANS.	ATROPHY OF THE CONDUCTING APPARATUS.
(1) It is seldom fatal.	(1) We do not know it ever to be fatal.
(2) At an early stage swelling and the appearances of ordinary inflammation are prominent.	(2) At an early stage, this may be the cause of symptoms of inflammation.

(3) When the effusion into the joint is absorbed the capsule is commonly found thickened, the cartilages are sometimes absorbed and the ligaments so much lengthened as to allow unusual mobility and dislocation.

(4) At the commencement of the process, slow absorption of the cartilages takes place, often followed by fatty degeneration, and the formation of ligamentous bands.

(5) Heredity does not seem to influence the affection, for one member of a family may be affected, and the rest be free.

(6) Is frequent among women, and rare among men.

(7) It occurs at any age, and individuals of weak frames whose extremities are cold are most liable to the disease.

(8) Everything debilitating, as uterine hæmorrhages, prolonged grief, persistent mental distress, loss of rest and dissipation, damp dwellings, poor food, and all rheumatic influences are supposed active causes.

(9) By test, no uric acid, or urate of soda, *thus removing rheumatism* and *gout* from consideration as causes; reduction of phosphoric acid in the urine.

(10) The disease is slowly but steadily progressive. It may be stationary for a time, but exacerbations are sure to follow (Weber). There is slight remission, but no intermission during the rest of the patient's life (Haygarth).

(11) It usually begins as a subacute disease.

(12) It is very intractable. When the disease is not advanced, *the affected joints few in number*, and progress slow, the prospect is more hopeful, especially if there is no disease to keep up the impairment of the general health.

(13) there is generally aching of the affected joints prophetic of an increase of pressure in the atmosphere.

(3) When this happens it would be liable to cause tinnitus, or impaired hearing, or both; a flapping mt., and disarticulation of the ossicula.

(4) The result of this change has been seen in anchylosis of the ossicles, especially of the stapes; retraction of the mt., and bands of adhesion in the cavity.

(5) Complete correspondence.

(6) Is more frequent among women than among men.

(7) The symptoms are manifest at middle age, or just before, and at any later period. It may begin in the earache of children; cold extremities are common.

(8) Idem.

(9) No tests, so far as I know.

(10) There are long intermissions in progress, judged by the impairment of function.

(11) An open question.

(12) Idem.

(13) Any existing impairment of hearing, or tinnitus is increased under the same circumstances.

(14) Frequent mental depression without a known sufficient cause.

(15) It does not lead to suppuration, but to atrophy and more or less deformity.

(16) The treatment must be sustaining. Local treatment by blisters, iodine paint, and croton oil in the beginning. Later use counter-irritation; later still, friction and slight motion. Living in a moderate winter climate nutritious food, warm clothing, etc.

(14) Idem.

(15) Idem.

(16) This general line of treatment is the best with which we are acquainted.

Arthritis deformans begins in the smaller joints of the body, is symmetrical in appearance and progress with lesions of the tissues surrounding the joints, atrophy of the muscular tissue, and in old cases a state of fatty and connective tissue degeneration (Weber). The Lilliputian joints of the ossicula auditus are peculiarly exposed to atmospheric changes by their location, and are in one of the extremities of the body, for which reasons they would seem to be more liable to an attack of this affection than even the joints of the head or foot. Rheumatoid arthritis, beginning in the small joints of the extremities, advances to the larger joints of the body, in which fact we may find an explanation of the pressure and pain about the head, and the diminution of intellectual apprehension, so common in cases of profound deafness in advanced aural atrophy. It may furnish a better demonstration of the deafness of boiler-makers, shipcaulkers, and locomotive engineers. Taking its symmetrical onset and advance as a point in evidence of its neurotic origin, it may also explain the change in voice so commonly met with among the profoundly deaf, who have become so by slow and progressive stages, for the recurrent laryngeal nerve makes the connection between the cerebro-spinal nerve centers and the vocal chords very intimate. The recurrent laryngeal is supposed to get its motor power from the pneumogastric, and irritation of the pneumogastric in the upper part of the neck has been proven by experiment to cause heat and tingling of the ear. Jewell (Jour. M. and N. Dis. 1874, 426) "looks upon articular rheumatism, as well as certain painful affections of the joints simulating rheumatism, as produced * * * by disease of the nerve trunks or nerve centers, leading to decided local irritation at the peripheral termination of certain nerves," and Brown-Sequard has shown that nerve fibers going to the blood vessels of the various parts of the head, come out chiefly from

the spinal cord by the roots of the last cervical and the first dorsal nerves.

Arthritis deformans, nervous exhaustion, and aural atrophy (progressive deafness) very greatly resemble each other. Each follows causes exhaustive in character; does not terminate fatally; most of the symptoms are subjective and functional, and often unaccompanied with apparent structural variation. In each there is periodical hopelessness and discouragement. In nervous exhaustion and the ear affection there is diminished ability to fix thought on any subject (lack of mental control) and change in the voice; and Garrod claims that the irregular form of arthritis sometimes attacks the internal (middle?) ear and the larynx, and causes hoarseness and a peculiar dry cough.

In the deafness of boiler-makers, undisturbed control of equilibrium and the absence of vertigo argue against a theory of labyrinthine trouble. Buck (N. Y. Med. Rec., July 5, 1875) thinks the peculiarities of these cases due to rigidity of the ligament at the base of the stapes or to some change in the membrana secondaria, which to my mind is the most natural explanation.

Arthritis deformans may occur at almost any age; at first in the most exercised small joints, and if neglected it will progressively attack every joint in the body. It would rarely be recognized in the ear before the age of thirty, when the true function of the ear begins to be impaired in the late stage of atrophy, though it might have existed from the age of four or five years, at which time it would have been in its inflammatory stage.

Even in childhood a differential diagnosis might be made from the catarrhal affection, and we may reason that the disease at the foundation of the atrophic process may *begin at any age*, although the atrophy is a medium senilis.

Von Trolsch thought the disease without catarrhal symptoms should be given a different classification, but it is yet generally classed as a catarrh by authorities, though Pomeroy (Dis. of the Ear, p. 148) in a cursory way says: "I believe that the rheumatic diathesis, in many instances, has much to do with the obstinate character of this affection; the rheumatic inflammation, according to its well known predilection for fibrous tissues, finding a lodgment in the muco-periosteal lining of the drum."

Whether or not atrophy of the middle ear is of the same origin as arthritis deformans, it has a more extensive pathology than that allowed to it.

Dr. C. M. Hobby, Iowa City, Iowa.—I can recall seven cases of arthritis deformans in persons related to each other not more remotely than second cousins, and occurring in the ramifications of a large family, and among more than thirty members of this family that I can now recall, there has been but one case of deafness.

Dr. L. Turnbull, Philadelphia, Pennsylvania, saw a case of this disease, arthritis deformans, on Canonicut Island this summer, every one of whose joints was immovable; he was like a chalk man. When I called to treat him for ulceration of the cornea his hearing was perfect. In another case that I saw every joint was out of its natural position; the hearing was perfect. (Inquiry being made, whether these gentlemen had examined the ears, and if they found any structural change; they answered, they *had not examined* the ears.)

Professor G. E. Frothingham, Ann Arbor, Michigan, said he had listened to Dr. Richey's paper with much interest, and all would admit that he had presented the theory with sufficient show of argument to challenge attention. While Professor Frothingham could not say that he is ready to accept the views presented, they are worthy of more careful consideration than could be given in an off-hand discussion of the subject, which, in the aspect in which Dr. Richey presented it, is new at any rate to him. It is true we have long acknowledged certain changes in the drum-membrane and the articulation of the bones of the ear, as due to a gouty or rheumatic condition, but the claims made in the paper he has not met with before. It is a subject upon which he must reserve his opinion until further consideration, as it does not fully accord with his present views. He is all the more glad on that account to hear this view presented, as progress is best made by interchange of views, and stimulation to research grows out of opposing theories. He will repeat "that man is a public benefactor who makes *two* blades of grass grow where one grew before." On the same principle, that man is a medical benefactor, who gives us two ideas where we have but one before.

In obscure subjects, like the disease under consideration, we should take into respectful consideration any plausible theory, and, for one, he is willing to devote to it careful study.

Professor E. De Rossi, Rome, Italy, inquired in what way Dr. Richey would distinguish between atrophy, due to the cause suggested by his paper, and atrophy of the ear consecutive to hypertrophic processes.

Dr. Richey stated that in the published abstract of his paper he had stated that the question of atrophy of the ear, consequent to hypertrophy, would not be raised in the paper. In answer to

Professor De Rossi, however, he said the *history* of the case would suggest an antecedent hypertrophic condition, by increased secretion and dimunition of the upper air-passages at some time; periods of greatly impaired function with relief, often without foreign agency; a subacute catarrhal condition, with thickening of the membrane involved, due to passive congestion, the impaired hearing being noticeable, especially during the exacerbations; and the absence of neuralgic pain. In atrophy, following arthritis deformans, on the other hand, there is, if any, very slight thickening of tissue; no perceptible increase in secretion; very slow, and progressive impairment of hearing, intractable in character; and neuralgic pain.

He did not anticipate immediate acceptance of the views offered. How can anchylosis, with prominence of the malleus and incus, be better explained? Is *dry* catarrh an inflammation? Mr. Henry Powers, of London, England, in his remarks upon bacteria in the section on ophthalmology, had intimated that the germs might, by migration, produce the joint affection, and Dr. Richey could not see that such a supposition would invalidate the theory of a neurosis, but, on the contrary, would do much to support it. He believes the bacterial theory, in explanation of this obscure affection, to be the *other* idea in Professor Frothingham's mind.

As arthritis deformans begins in the smallest and most used joints in the body, it might exist in the ossicula auditus, and be absent elsewhere. Drs. Turnbull and Hobby had not examined the structures of the ears in the subjects mentioned by them; they *did not notice impairment of hearing*. Their observations are therefore negative, for, how often do we see distortion of the malleo-incudal articulation, without perceptible impairment of hearing.

Dr. C. M. Hobby, of Iowa City, Iowa, read a paper on

CEREBRO-SPINAL FEVER AS A CAUSE OF DEAFNESS.

Cerebro-spinal fever occurs very early in life, fourteen per centum of the cases of deaf-mutism thus caused having originated under one year of age among those personally examined, fifty-seven per centum originating under two years of age, one case noted at two months and five at three months. What would be the percentage if the proper value were given to the record "born deaf?"

Investigation has heretofore been mainly directed to consanguinity and prenatal influences as causes for deaf-mutism, and based upon the startling, apparent, proportion of congenital cases. Reports of from thirty to sixty per centum of cases "born deaf" are acknowledged by many superintendents to be valueless; probably ten per centum will more than cover the congenital cases.

The nasal diseases of infancy are not so operative as has been supposed, a large proportion of so-called congenital cases being due to early intracranial disease.

Diagnosis of cerebro-spinal fever in infancy presents many difficulties. Cases of deafness attributed to scarlet fever have been found without tympanic lesions, and without ability to perceive sound either aerially or by bone-conduction.

In eighty-four deaf-mutes, where the deafness was caused by cerebro-spinal fever, sixty-three per centum had absolute loss of hearing in both ears; in about the same percentage no lesion was found in the tympanum by inspection of the membrane.

Blindness after cerebro-spinal fever is usually caused by suppurative choroiditis, but atrophy of the optic nerve, without ocular lesion, occurs (two cases reported). Deafness probably due in the vast majority of cases to disease of the labyrinth, but occasional lesion of the auditory nerve is probable; coincident paralysis of the facial is at least very rare; sense of taste is sometimes lost or affected. Blindness resulting at the same time with deafness is not very uncommon.

From the foregoing considerations, and from the comparison of the annexed tables, with each other, and their interpretation in the light of general observation and experience, I think the following conclusions are warranted:

1st. Cerebro-spinal Fever is prevalent throughout the United States, and is a constant factor in the production of deafness.

2d. That, upon the surface, it appears equal in importance as a cause for total deafness with Scarlet Fever.

3d. That when proper weight is given to the reports of causes of deaf-mutism, Cerebro-spinal Fever is the disease, above all others, producing total deafness, which the non-professional mind would class as "Fever," "Congenital," or "Unknown."

4th. That from reasons, some of which are specified above, and others of which are apparent to any physician who has studied the defective classes, it is probable that not more than ten per cent. of the cases of deaf-mutism are actually congenital.

5th. That with this assumption there appears upon the face of the reports thirty-five per cent.

of cases of total deafness, for which no rational explanation is offered.

6th. That the greater part of this thirty-five per cent. result from intra-cranial causes, including under intra-cranial disease, affections of the labyrinth.

7th. That it is important that more thorough investigation of Cerebro-spinal Fever be made, and especially of its relation to deaf-mutism, with the hope, in the light of more perfect knowledge of its cause and methods of dissemination, the production of deafness from this cause, may be diminished, as much as the sources of blindness were cut off by vaccination.

Dr. L. Turnbull, Philadelphia, Pennsylvania, inquired if Dr. Hobby had employed the hearing-trumpet in testing his cases of deaf-mutism. Are there not epidemics of meningitis in the western countries? Has not syphilis an important agency in the production of deaf-mutism in young children?

Professor G. E. Frothingham said his examination of the cases of deafness produced by Cerebro-spinal Fever agreed with that of Dr. Hobby, as stated in his paper. He had found, in a large majority of cases, a normal appearance of the drum-membrane. He had met with mixed cases, of which the history pointed to cerebro-spinal meningitis so positively, that there could be no doubt that the patient had suffered from it; there had also been inflammation of the middle ear, and, in such cases, the pharynx and nasal cavities had shown an inflammatory condition; while these had been much benefited by treatment, those, presenting normal drum-membranes with pervious eustachian tubes, he had found to be hopeless. He had heard of improvement in one instance only; the family of a child informed him that it had partially recovered its hearing. He had once seen an infant with double optic atrophy from cerebro-spinal meningitis. For three or four months its condition was such that its attention could not be attracted by light, while the optic papillae were glistening white. It, afterward, recovered sufficient vision to reach for large objects, and seemed to delight in viewing them. These cases could be explained by supposing that the destructive change had not involved *all* the nerve cells and fibres, in the rapidly growing child, but had left a small number capable of future growth.

Professor E. De Rossi inquired whether Dr. Hobby had made *post mortem* examinations in any of the cases?

Dr. Hobby had not; his study of the cases had been purely clinical. Those who have been so fortunate as to have opportunity to examine those mute from this cause have found lesion of the labyrinth.

SECTION ON LARYNGOLOGY.

Fourth Day—Morning Session.

The first paper was on

NASAL FIBROMATA,

by Professor W. E. Casselberry, of Chicago, Illinois. Under this title he included only neoplasms of a purely fibrous or predominating fibrous structure, which originate in the nasal fossæ, anterior to the naso-pharynx, and excluded those of a compound type, prone to occur in this situation, as fibro-myxomata and fibro-sarcomata, and also all those originating in the neighboring sinuses and in the naso-pharynx.

Recent literature has contained numerous reports of cases of naso-pharyngeal fibromata, but fibroid tumors originating primarily, in the nose itself are comparatively rare. The *Internationales Centralblatt für Laryngologie, Rhinologie*, etc., does not contain the report of a single case, and none are included in 265 cases of nasal neoplasm reported by Hopman and Schmiegelow. Mackenzie reported one case of his own, and two others, probably fibromata.

Growths in the nose and naso-pharynx, in a measure correspond in type to the structural elements of the tissue from which they originate. The fibrous layer of the mucosa is especially abundant in the naso-pharynx, hence the frequency of naso-pharyngeal fibromata, while in the anterior nares the superficial mucous layer predominates, and hence the more common occurrence of myxomata and the comparative infrequency in this location of the fibromata. Fibromata may, however, arise from any part of the nasal cavity, as turbinated bodies, septum and floor, but the vault, in the nose proper, is its favorite site.

Local irritation from traumatism or a perversion of the chronic hypertrophic inflammatory process may serve to excite a hyperplasia of the fibrous elements. The early symptoms are of a catarrhal nature, followed by obstruction and distension of the fossa. Nasal bones are forced apart, neighboring cavities encroached upon, eyes protruded and the deformity of "frog-face" possibly produced.

The tumor is not multiple, but may be lobulated, of dark red color, broad base, non-translucent and firm and resistant to the probe.

Microscopically, firm, dense, whitish, and enveloped in a smooth, fibrous capsule.

Microscopically, the fibers are grouped in bundles, or are simply closely interlaced.

Nasal fibromata tend to degenerate into sarcomata and to recur after removal, although if thoroughly extirpated and the base cauterized to the bone the prognosis should be good.

He gave a systematic table of eight cases, including the name of the operator, date, age, symptom, etc., treatment, and result.

In his own case, a lady aged forty years, the left fossa anteriorly was filled by a firm elastic tumor, and there was commencing "frog-face," but no involvement of the antrum or orbit. Septum, anteriorly, was deviated by pressure, far to the right. Naso-pharynx normal. It was removed piece-meal, in weekly sittings, by the galvano-cautery ecraseur, the knife electrode being employed when necessary to prepare a place for the loop to take hold. For the ecraseur he used, instead of platinum, steel piano wire, which on account of its resiliency offers resistance to tissues against which it is pressed, retaining or regaining its contour after contact, thus facilitating envelopment of the part. Under cocaine the operations were painless and comparatively bloodless.

The primary attachments extended along the horizontal plate of the ethmoid bone to the anterior surface of the body of the sphenoid. The patient remained well at the end of sixteen months. Of the seven other cases appended, the treatment in case 1, is not stated. In case 2, the tumor projected posteriorly, and was removed by forceps. In cases 3, 4, and 7, disfiguring and somewhat dangerous external operations were performed to give access to the tumor. In case 5, the tumor was successfully removed in fifteen sittings by a cold wire snare. In case 6, attempts at removal by ligature and forceps failed, and an attempt to cut through the base by a bistoury resulted in death from hæmorrhage.

In his own case the galvano-cautery used in the manner described was the one means which rendered a formidable external operation avoidable. But it must not be supposed that all cases will be susceptible of this means of cure. Enormous size and penetration into accessory cavities may render it ineffective.

In such cases electrolysis might serve to reduce the size to such a point that galvano-cautery could cope with it.

Efforts to envelop the whole tumor in the ecraseur for removal at a single operation will usually fail on account of adhesions and tight fit into nasal inequalities.

Mr. Lennox Browne, of London, England, in opening the discussion, said the subject was one of practical interest, and the paper was drawn on the lines on which a paper should be drawn, that is when one listens to such a topic he likes to know at the same time what others have done on the same subject. He could not understand how in modern times one could perform an external operation without first exhausting intranasal means. A similar case he had not observed, but he agreed with the author concerning the treatment.

Professor M. F. Coomes, of Louisville, Kentucky, spoke of two similar cases, but of fibromyxomatous type.

Professor E. F. Ingals, of Chicago, Illinois, said he had not found cocaine in all cases to render operations painless; that the author was fortunate in having so little hæmorrhage, and that he had not been successful in causing the steel wire to heat as readily as platinum.

Professor F. O. Stockton, of Chicago, Illinois, said that a little iridium added to platinum gave the wire the necessary stiffness.

Professor Casselberry, in closing, said individuals differed in susceptibility both to pain and cocaine, still non-success was usually due to solutions too weak or not thoroughly applied. One can use weak solution first to test the patient before resorting to 20 per cent. solutions. The latter should be applied only by cotton applicator, and not by spray, thus avoiding systemic absorption. Perhaps platinum takes the glow from the battery more perfectly than steel, but steel heats for all practical purposes as well as platinum. The steel wire is, however, more liable to burn in two. A fresh piece must be used each time.

Afternoon Session.

Dr. John O. Roe, of Rochester, New York, then read a paper on

CHOREA LARYNGIS,

usually associated with an attack of general chorea. The author gives the history of cases where the affection was purely local as to its manifestation.

Miss S———, aged seventeen, delicate and nervous, after an attack of quinsy, developed a peculiar spasmodic and uncontrollable cough. She would cough rapidly ten or fifteen times, with a peculiar hoarse, barking sound, after which there would be an intermission of from one to three minutes. The cough was in sound so like the barking of a dog that she was the curiosity of the neighborhood, and known as the "barking girl." It did not continue during sleep. He tried electricity and local application without effect. Hypodermics of morphia and atropia produced only temporary relief. Benefit was derived from treating it as chorea. It suddenly ceased ofter seven months.

Another case, a healthy girl of thirteen, with much the same history, was mentioned, where there was no nervousness during the intermissions which lasted one to two minutes.

He mentioned a case of a young woman of sixteen years, with delicate health, where the barking cough continued during meals, and even during sleep, without awakening her. Spray of cocaine increased the trouble. These cases were not associated with uterine trouble. On examining the larynx he found but little congestion or inflammation. Before a paroxysm of coughing there would be a peculiar twitching of the vocal chords for a while, then they would be suddenly approximated and forced apart as the cough occurred. The movements were those of chorea. As a rule, the treatment should be systemic, in addition to local applications—arsenic, valerianate of zinc, iron, valerianate of atropia, hydrocyanic acid, morphia, etc.

Dr. Thorne, of Cincinnati, Ohio, mentioned several cases where chorea laryngis was associated with pregnancy, beginning in second or third month, and ceasing spontaneously just before delivery. He had one case where there was such an alarming spasm of glottis that he thought he would have to perform tracheotomy. The chords were constantly in motion between attacks.

Dr. Lennox Browne, of London, England, has seen a case where the disease appeared with each pregnancy, and disappeared just before delivery. Also three cases where it was cured by the removal of enlarged tonsils. He thinks a sea voyage the very best remedy.

In a paper on

THE DELETERIOUS EFFECTS OF TOBACCO ON THE THROAT AND NOSE,

Professor M. F. Coomes, of Louisville, Kentucky, said, that he considered smoking far more injurious to these parts than chewing. The smoke came into the mouth heated, and loaded with an irritating oil that would soon coat the mucous membrane were it not washed away by the saliva. Cigarette smoking is especially injurious, because the smoke is so universally inhaled, causing pharyngitis, laryngitis, and chronic irritation in the nose, not to mention the injury it may occasion to trachea and lungs. Where the smoke is habitually expelled through the nose, we find hypertrophies, congestion, dilated vessels, and a hæmorrhagic condition. The sense of smell is impaired or destroyed. The potash salts may also have some effect in adding to the injury. Ninety-five per centum of smokers have something abnormal or unhealthy about the upper air-passages. In bad cases, he found chronic hyperæmia and inflammation of epiglottis, with congested chords, and a hacking cough to remove the tough mucus; the voice tires easily.

A peculiar form of tobacco habit is what is known in the South as dipping snuff. It is prevalent among negroes and lower classes of whites. They chew the end of a twig so as to form a rude brush, then they continually dip this into a small box of snuff, and rub it over their gums and teeth. The gums being pushed down on the teeth are red and inflamed, from tobacco lodged between them and the teeth, and the whole pharynx is inflamed.

Professor F. O. Stockton thinks that as a nation we are the greatest chewers, and that chewers suffer most. He does not like potash salts used in the throat or the nose.

Dr. L. Browne smokes cigarettes, and considers them less harmful than any other form, if we don't inhale the smoke, and use a fresh mouthpiece.

The taking of snuff is an especially baneful habit, and likely to cause polypi. Singers should not use tobacco. He excludes potash salts, except, perhaps, the bromide, in treating the upper air-passages.

INTUBATION OR TRACHEOTOMY.

Dr. Max J. Stern, of Philadelphia, Pennsylvania, in a paper on this subject first gave a short history of tracheotomy from the earliest record to the present time. Some of the earlier statistics on the continent of Europe show as high as thirty per centum of recoveries.

In the United States our results have not had such encouraging results, due probably to the difficulty of obtaining consent to an early operation.

He also gave the history of intubation from the first catheterization to the perfection of Dr. O'Dwyer's tubes.

He quoted the following statistics to show the comparative percentage of recoveries: Intubation, 26⅔ per centum; tracheotomy, 26⅔ per centum.

The number of bad results due to accidents was very small in either case. From the following statistics it appears that up to five years of age intubation has decidedly the advantage, over that age tracheotomy has the best record:

Age.	Intubation. Per cent.	Tracheotomy. Per cent.
Under 2 years	15	3
Between 2 and 2½ years	24	12
" 2½ and 3½ "	28 7-10	17
" 3½ and 4½ "	33 7-10	30
" 4½ and 5½ "	28 3-10	35
Over 5½ years	37 3-10	39½

Some of the advantages of intubation are that it is easier to gain parents' consent, does not require

skilled assistants or attendants afterward. Less care in the after-treatment is required.

Tracheotomy is extremely difficult in very young children. The usual time that the tube is left in the larynx is four to ten days. As the air can reach the lungs through the proper channels there is less danger to the lungs.

He advises that if the child be under three and a half years, intubation be performed if possible; between three and a half to five, to resort to either; if over five years, perform tracheotomy. Intubation was advised for adults; and that one do not perform tracheotomy if there should be much membrane in trachea. Intubation was recommended for the poor when they cannot get good nursing. Dr. Stern then closed by paying a high tribute to the good work accomplished by the perseverance and energy of Dr. O'Dwyer.

Dr. Charles Denison, of Denver, Colorado, believes in tracheotomy without a tube. He showed a gag which he had modified by removing the long levers that sometimes cause its displacement. It was kept open by a rachet catch.

Professor W. E. Casselberry, in intubation, passes the index-finger not into the larynx, but to the arytenoid cartilages and entrance of œsophagus, instead of trying to lift the epiglottis. He advises wearing a finger-stall and practice on cadaver first.

SECTION ON DERMATOLOGY AND SYPHILOGRAPHY.

Fourth Day.

Dr. P. G. Unna, of Hamburg, Germany, read a paper, accompanied by microscopic demonstration, on

SEBORRHŒAL ECZEMA.

The author does not consider that the diagnosis "acute" or "chronic" eczema is a sufficiently exact and scientific one. For example, there are three distinct types of infantile eczema of the face; viz., a nervous, a tuberculous, and a seborrhœal. The nervous type is seen in the eczema of dentition, appearing upon a perfectly sound skin, usually first upon the cheeks and then upon the forehead. The eruption itches in proportion to the strength of the infant and the thickness of the epidermis. The vesicles, at times, suggest in their appearance and their reddened base herpes zoster, but the marked symmetry of the lesions and the tendency to relapse would prevent such a diagnosis. Seborrhœal eczema is entirely different in that the skin is not in a previously healthy condition. A seborrhœa has existed upon the scalp probably a few weeks after birth, which often spreads over the upper portion of the face after becoming somewhat moist. There is less itching than in the eczema of dentition. For the latter affection a zinc-ichthyol ointment is recommended to be applied and covered with a mask, together with the bromide of potassium, internally, to allay nerve-irritation. In seborrhœal eczema sulphur should be added to the zinc-ointment. Ichthyol is useless, but resorcin acts well.

Dr. Unna regards all so-called dry seborrhœas as chronic inflammatory processes of the skin, and his studies convince him that there is no hypersecretion from the sebaceous glands which can clinically be considered a dry seborrhœa, produced by a deposit upon the surface of the product of these sebaceous glands. The disease which Dr. Unna has named eczema seborrhoicum is dependent upon a condition of, or rather change in, the coiled or sweat-glands, giving rise to the secretion of fat by them. An increase of fat upon the surface indicates increased activity when it proceeds from the sebaceous glands, but when the sweat-glands pour out fat it is because of the death of their endothelial cells.

Almost all seborrhœal eczemas have their starting point in the scalp. Three forms are described. In one, eczema seborrhoicum begins as a latent catarrh of the scalp, and goes through the stages of scaly formation and dryness, finally ending as a hyperidrosis oleosa. In the second, the scales heap themselves up between the hairs into fatty crusts, and cause the hairs to fall out. A corona seborrhoica upon the forehead, at the margin of the hair, is described, which is typical of this form of the affection.

The third form is that in which the catarrhal appearances are the most pronounced and in which "weeping" occurs, especially about the temples and eyes. This follows a simple itching pityriasis, and produces the appearance of a moist, shining eczema. A pityriasis or a seborrhœa may exist upon the scalp, while at the same time an eczema is present upon the face. The chest is affected with the crusty form almost exclusively.

Upon the arms there is a predilection for the flexor surfaces, which is explained by the rôle the sweat glands play in eczema seborrhoicum.

Upon the legs, early in the disease, we find only the large papular and crusting forms.

Patches of seborrhœa about the mouth and nose of old people are often the starting-points of carcinoma. In almost all cases of eczema seborrhoicum of the scalp, a simple, itchy scaliness of the ear is observed. A patch of eczema seborrhoicum is extremely stationary, remaining for years possibly without much change in size

and giving rise to only slight symptoms. Beginning upon the scalp or head, as a rule, it extends to other parts below in a very gradual manner; especially locating upon the face, sternal, and intra-scapular regions. This course is so often the rule as to be regarded as pathognomonic, as no other eczema or psoriasis runs this course.

When the whole body becomes involved it resembles closely pityriasis rubra. Psoriasis is often confounded with seborrhœal eczema. The latter attacks the parts near the median line of the body, and is more stationary than psoriasis. It is preceded by a local seborrhœa, and the scales and crusts have a decidedly fatty character. The patches have also a peculiar configuration and spontaneously flatten out in the middle or upon one side. The prognosis is more favorable than in psoriasis. The cure is not easy, because the deep-seated sweat-glands are implicated. Sulphur is the great remedy for the disease. More active remedies for the scaly and crusty forms are pyrogallol and resorcin. Internal treatment is seldom required. Once cured, prophylactic measures, such as hygiene of the skin must be employed.

In the discussion which followed, Dr. J. Zeisler, of Chicago, Illinois, said he was impressed with the closeness of Dr. Unna's observations. Such cases are frequently seen here, and are called seborrhœa. He had regarded it as a hypertrophy of the endothelium of the sebaceous glands.

Professor G. H. Rohe, of Baltimore, Maryland, said no one was in a position to call in question any statements or claims made by Dr. Unna, as similar work had not been done by others.

Professor Robinson, the president, said there is much difficulty in classing eczema on account of its great varieties, causes and modifications.

As regards seborrhœal eczema, seborrhœa and eczema existing together is not uncommonly observed. He can understand how they can go hand in hand, but does not see how the fat can have an effect as a local irritant in producing an eczema.

In closing, Dr. Unna said the point had been misunderstood; that he did not believe the fat was the cause of the irritation. He had merely spoken of the clinical side of the question. He was at the present time experimenting with some thirty cultures of micro-organisms from seborrhœa, and believed that a parasite was the cause of the irritation at a point where the fatty matter existed.

What we have called seborrhœa sicca is not a hyperscretion, but an inflammatory affection.

Warts of the scalp and of the penis he also thinks are due to a parasite which finds its pabulum upon the skin of the penis and also upon the fatty matter from a seborrhœa of the scalp.

MULTIPLE SARCOMA OF THE SKIN.

Professor G. H. Rohe, of Baltimore, Maryland, presented a patient with this rare disease, characterized by the development within the skin of multiple sarcomatous tumors. The patient was a man of about thirty years of age. The tumors were of about the size of an English walnut, and were situated upon the regions of the back and shoulders, legs and thighs. He was also suffering from tuberculosis of the lungs, and had also partial hemiplegia.

Professor A. R. Robinson, the president, gave a report of

A UNIQUE CASE OF PROGRESSIVE MELANOSIS OF THE SKIN,

the peculiarity consisting in the progressive nature of the affection, its long duration, and the situation of the pigment. The patient was a female who, twenty-one years ago, at the age of eight, first noticed a small, dark spot upon the side of the temple. There were no subjective symptoms of pain or tingling in the part. She had suffered from chills and fever. The lesion consisted of pin-point-sized non-elevated dark or bluish-dark spots, which formed a patch occupying the whole lateral surface of the forehead.

Microscopical examination of the skin showed the epithelium to be of normal thickness. The rete mucosum contained dark-brown pigment-granules, which were also seen in lower rows of the pavement epithelium.

Discussing the paper, Dr. Unna said he had been impressed with the blue color of the patch as represented in the colored drawing contrasting with the dark-brown color of the pigment seen under the microscope. He asked if clinically the disease presented this blue color, and whether the corneous layer was especially thick. He had never seen a similar case, and regarded it as interesting and unique.

Professor Robinson answered that the color was faithfully represented and that the corneous layer was not thick.

A paper was then read by Dr. A. H. Ohmann-Dumesnil, of St. Louis, Missouri, on

DOUBLE COMEDO.

Dr. Dumesnil said that he had found double comedo in two and one-fourth per cent. of all male patients in hospital practice. It occurs upon all portions of the body excepting the limbs and forehead.

In regard to the formation, he does not regard

it as congenital, but that two contiguous comedones become fused by the absorption of the intervening septum. Multiple plugs of sebaceous matter are found, having only one central common cavity and possibly three or four external openings, all connected within. This is readily demonstrated by cutting the bridge of skin between them.

The mode of production is the same as in the single comedo, and the cavity is the analogue of the single form. This explanation he regarded as more reasonable than to suppose the existence of a number of anomalies in comedo-formation, with the necessity of having an anomaly to account for each new case.

Dr. Unna, in discussing the paper, said he believed that double comedo never developed in a totally healthy skin—that at some time there had been an inflammatory process followed by cicatrization. He had observed many cases and always found evidences of these changes, and a scar could usually be discovered.

Dr. Dumesnil did not believe in the inflammatory process theory, and had not observed scars in many cases. He hoped some one would be able to make observations upon the disease in the formation-stage.

The next paper was by Dr. H. Watraszewski, of Warsaw, Poland, on

TREATMENT OF SYPHILIS BY INJECTION OF INSOLUBLE MERCURIC SALTS.

There is nothing new in the injection of insoluble salts of mercury in syphilis. The author has already made a communication on the same subject. He has since pursued his investigations and has been led to give the preference to the yellow oxide of mercury. The injections are to be made about once each week, and from four to five injections have been found sufficient to cause a disappearance of the symptoms. He has never had any difficulty from abscesses.

Cases come to the special hospital for syphilis, with which he is connected, from all parts of Poland, having been treated by other methods. Some have the disease in its worst forms, and present all the conditions favorable for a thorough test of this treatment. The author has had results follow the injection-cure which are very favorable and warrant his enthusiasm. The feature of the method is the small number of injections required, twelve to twenty being required for a course of treatment, and only four or five to cause a disappearance of the lesions at any time present.

Once each week a Pravaz syringeful of the following solution is to be injected deeply into the tissues.

℞. Hydrargyri oxyd. flav.....1.0 gram.
Gummi arab. .....0.25 centigram.
Aquæ destillat.....30.0 grams.
M. S.—Shake and inject.

A Pravaz syringeful represents about four centigrams, or two-thirds of a grain.

A calomel-solution made in the same way, but three times as strong, has been used by the author, who finds that while it is beneficial the reaction and irritation caused by it are much greater.

In the discussion, Dr. Gottheil, of New York, N. Y., said that during the past few years we have had brought forward a variety of new methods for the injection of the mercuric salts. He thinks that patients in other countries must differ from those in America, for here they will not submit to this method. Internal treatment, he believes, must here at least remain the more common course. He asked if the injection-course was employed only in the severer cases or as routine treatment.

Professor J. V. Shoemaker, of Philadelphia, Pennsylvania, said he had treated many cases of syphilis by this method during the past seven or eight years, and held it in high esteem, especially for old, chronic cases, where treatment had failed. He made the injections in the arm, or wherever there was plenty of fatty tissue, in the inferior scapular region and the back, and deep into the muscular tissue of the gluteal region when the patient was thin. He employed the bichloride in a watery solution, and gave as high as half-grain and even grain-doses when the patient had been under treatment for some time, making the injections once in about three days. He had never seen an abcess result.

Dr. Klotz, of New York, N. Y., said he had had considerable experience with the hypodermic method, both in public and private practice, and he was surprised to hear the remarks of Dr. Gottheil relating to an inability to employ it with patients in this country. His private patients had never objected, when they were intelligent men and the process had been explained to them. In fact, when a relapse occurred they would voluntarily return and ask for it. There is some pain, but the patient will stand it, and the results compensate for it.

Dr. J. Zeisler, of Chicago, Illinois, was surprised to hear what Professor Shoemaker had said. He had considered that the salts should be injected daily. The more we give at a dose the greater is the danger, and he asked if such a large dose as a grain was not very dangerous to the life of the patient. In Vienna, when he had used the method, the rule was to give one centigram in

the syringeful. He thought the good feature of the method proposed by the reader of the paper was the small number of injections necessary to get the good results claimed.

Professor Shoemaker, in answer, said that some one in London had reported fifteen hundred cases treated, in which one-third grain of bichloride had been the dose used.

He usually began with one-tenth grain, and increased it until the physiological action had been produced, or the larger doses used.

Dr. Watraszewski, in closing, said that we must not use the hypodermic method indiscriminately, but must individualize. He saw each year many of the worst imaginable cases. The patient would throw pills out of the window instead of taking them. Inuctions would be improperly and imperfectly performed; but here we have an accurate, sure, and safe means of dealing with all cases, and in severe cases the cures were much more rapid than by other means. It has proven especially beneficial in his hands in syphilis maligna of finger, and in late syphilis.

SECTION ON PUBLIC AND INTERNATIONAL HYGIENE.

Fourth Day.

A paper by Tomassi Crudelli, of Rome, Italy, on

FACTS AND THEORIES RELATING TO THE CAUSE, NATURE AND PREVENTION OF MALARIAL FEVER,

was read and the bacillus described.

Dr. George T. Maxwell, of Ocala, Florida, then read a paper on

THE INFLUENCE OF CLIMATE ON THE PRODUCTION OF CHOLERA INFANTUM,

in which he took the position that heat was an essential factor in its causation. The general scope of the paper was that the cause of this disease is not yet well understood.

THE HISTORY AND PRACTICAL APPLICATION OF STEAM AS A DISINFECTANT,

was the title of a paper read by Dr. A. N. Bell, of New York, N. Y., which was followed by papers on "The Sanitary Inspection of Railroad and Passenger Cars," by Dr. R. Harvey Reed, of Mansfield, Ohio; "Public Hygiene," by Dr. W. C. Cook, of Nashville, Tennessee; "The Clinical History of Continued Malarial Fever," by Dr. B. D. Taylor, U. S. Army; "A New Method of Detecting Trichina Spiralis in Meat," by James A. Close, M. B. (Toronto), L. R. C. S. E.

SECTION ON CLIMATOLOGY AND DEMOGRAPHY.

Fourth Day.

Dr. Titus Munson Coan, of New York, N. Y., read a paper on

AMERICAN MINERAL WATERS, WITH REMARKS ON CLIMATE.

He discussed the subject under four topographical headings: Springs of the Atlantic, the Southern Central, the Northern Central, and the Western or Pacific States. He called attention to the fact that much of the Eastern area of the country was of earlier formation than that of Europe; that, in fact, this part of the New World was, geologically speaking, the Old World, and not the New. This fact explained the comparative absence of thermal springs in the East, while the Western area, including but thirty-nine per centum of the total area of the country, yet contained eighty per centum of the known thermal springs. The range of the American mineral springs in their chemical constitution is very great, and their curative waters are as important as those of Europe. In some parts of the country, as in New Mexico and in Nevada, it is often easier to find an alkaline or a saline spring than a stream of pure water. Dr. Coan gave a rapid survey of the subject, mentioning the typical springs which are suitable for the cure of particular diseases, and at which good hotel or other accommodation can be found. He remarked upon the comparative absence of well-appointed *sanatoria*, or cures, at the American springs, and the consequent lack of systematic treatment, leading both patients and physicians to underrate the curative value of spring-treatment. Climate is an adjunct element of the utmost importance in spring-treatment; and the best climate in the country is that of California and Oregon. The climate of the Hawaiian Islands is probably the most equable that is known, at the comfortable range of about 70° to 80° F., and those islands are destined to become a health resort for Americans.

Dr. Richard J. Nunn, of Savannah, Georgia, read a paper entitled

A CONTRIBUTION TO THE STUDY OF CLIMATIC AND OTHER PECULIARITIES OF LOCALITIES WHICH DETERMINE EXEMPTION FROM ENDEMIC PLAGUES.

The object of Dr. Nunn's paper was to determine whether the extraordinary exemptions from certain diseases in Savannah are due to any special topographical or sanitary conditions in that city.

Vesical calculus, typhoid fever, typhus fever, puerperal fever, are absent; Asiatic cholera

visited the city only once (1866); diphtheria and exanthematous diseases are mild; membranous croup is exceedingly rare; cholera infantum is mild and exceedingly rare; cerebro-spinal meningitis has appeared but once in the city; sunstrokes are very unusual; erysipelas is not common; yellow fever has occurred but four times as an epidemic; dengue is infrequent.

The varying death-rate between the white and black races was referred to. Between 1856 and 1860 the black mortality never reached that of the whites, while since the war the death-rate among the negroes has reached double that of the whites. The changed social condition of the black race is supposed to be responsible for this variation. Formerly the negroes were almost entirely exempt from consumption, now they are extremely liable to this disease. The same may be said of syphilis.

The following papers were then read:

"The Injurious Effects of Overcrowding in Cities," by Dr. A. Wernich, of Coslin, Germany; "The Thermometer as a Climatological Instrument," by Major Charles Smart, Surgeon United States Army; "Vital Statistics and Medical Geography," by Alfred Haviland, M.R.C.S., of London, England; "Western North Carolina as a Health Resort," by Dr. Henry O. Marcy, of Boston, Massachusetts; "Therapeutic Influences of the Climate of Southern California," by Dr. P. C. Remondino, of San Diego, California, and "Short Notes on the Mineral and Thermal Springs of California," by Professor W. F. McNutt, of San Francisco, California.

SECTION ON PSYCHOLOGICAL MEDICINE AND NERVOUS DISEASES.

Fourth Day.

Dr. S. S. Bishop, of Chicago, Illinois, read a paper on the

PATHOLOGY OF HAY FEVER.

He believed that full reliance could never be placed in the pollen theory. The very fact that hay fever recurred upon the very same day of the year in many cases, irrespective of the late or early coming of the seasons, was a proof against it. He believed it was of nervous origin, and would designate it by the term nervous catarrh.

Dr. Channing thought it should hardly be dignified with the term of neurosis. He supported the pollen theory, and stated that removal to mountains or sea-shore resorts was an effectual remedy in the cases he had seen.

Dr. Brush, of Philadelphia, Pennsylvania, did not believe in the pollen theory. He had himself suffered from hay asthma at different times in the summer, from July until autumn.

Dr. Hurd believed in the neurotic origin of hay fever until the present season, which he said had been an unusually hard season for sufferers from nervous troubles. As a matter of fact, hay-fever invalids had had little or no discomfort. He believed ragweed to have a potent effect in causing hay fever, and stated that in Michigan this year ragweed had not flourished, and the result is seen in the little discomfort from hay asthma.

Dr. Andrews, the president, believed we could point to no one cause for hay fever. Different causes effected different people. He would ask Dr. Bishop for his views on the treatment of hay fever.

Dr. Bishop stated that people of a particularly nervous temperament were the greatest sufferers from hay fever, just as they were often great sufferers from peculiar troubles of nervous origin. He had heard a patient declare that eating strawberries would throw her into convulsions. Hay fever is most prevalent, he said, during the most depressing season of the year. He could not believe in the pollen theory.

As to the treatment, he would say that it was more palliative than curative in the majority of cases. One physician of his acquaintance had procured benefit in forty-five cases by the application of the galvano-cautery to the septum nasi. He had obtained either partial or complete relief.

As to his own practice, he had found the use of a combination of sulphate of morphia and atropia, in the proportion of $\frac{1}{150}$th of a grain of atropia to one-half grain of sulphate of morphia, to have a most beneficial effect. Not that he would give one-half grain of morphia to patients at once. He had made this combination of morphia and atrophia into small tablets, and gave them in the proportion of one-eighth of a grain of morphia to a proportionate amount of atropia.

In his experience, if a patient would take one or two of these tablets immediately upon feeling the first symptoms of hay fever, it would usually abort the attack. He had always given as large a dose of morphia as he thought the system of the patient could stand, in order to make an impression at once upon it. He had also found taking cool drinks or ice-cream immediately before going to bed to be of great assistance in warding off nocturnal attacks.

If a patient keep himself cool throughout the day, too, there is less danger of his being attacked. Quinine deadens sensibility, and is of use, but will not always avert an attack.

The next paper was by Dr. Elliott, of New Haven, Connecticut, on

THE TREATMENT OF NEURALGIA,

by the general practitioner.

Dr. Crego did not like to hear that Dr. Elliott prescribed so much morphia in the treatment of neuralgia. It is the duty of physicians to use as little morphia as possible. Arsenic and iron should be prescribed, and electricity be used as often as practicable.

Dr. Duquet thought well of the hypodermic injections of chloroform in sciatica. He had found injections of twenty drops very deeply into the muscles, just at the beginning of an attack, of great value. He did not share in Dr. Crego's sweeping denunciation of morphia.

Dr. Heber Ellis thought highly of hydrochlorate of ammonia, which he said had been used with success in Germany, and which he had himself found valuable. He could not so highly recommend quinine. He had seen cases of chronic deafness result from its constant use.

Dr. Gristrom, of Sweden, had found massage of great value in the treatment of neuralgia.

Professor D. R. Brower, of Chicago, Illinois, discouraged the indiscriminate use of morphia and quinine. He had seen too many morphia *habitues*, whose habit had commenced in this way, not to feel like protesting against its too frequent use. One may obtain a great amount of *éclat* for instantly relieving the patient, but do him, in many cases, far more harm than good.

Dr. Clark, of Toronto, Canada, said he took good care when prescribing morphia, in all cases, to conceal from the patient the fact that he was giving him morphia. Many times when prescribing it internally he gave it with some medicines of such nauseating bitterness that the patient was rarely inclined to ask for its like again. He believed that the treatment of neuralgia should depend upon the causes of the disease.

Dr. Andrews, the president, recommended the use of cod-liver oil in the treatment of chronic neuralgia. In an emulsion by adding phosphites, iron, arsenic, and other tonics, it was excellent. The use of the hot water bag, too, was very useful.

Dr. Russell read a paper entitled

BORDERLAND OF INSANITY,

endeavoring to show that epilepsy and kindred diseases did not necessarily produce mental weakness. He instanced Julius Cæsar, Napoleon, Martin Luther, Cowper, and others.

Dr. Gundry said we had no exact facts of any kind as to the nervous troubles from which Cæsar, Napoleon, and others, were said to suffer.

Dr. Porter hoped the suggestions of Dr. Russell's paper would be followed. In too many cases were the obvious signs of insanity not heeded, and oftentimes a patient is permitted to remain at home, passing without treatment into a case of chronic insanity.

Dr. Ellis, of London, England, thought that the course pursued in the past, both in England and America, in the commitment of patients to asylums, was not such as to induce the friends of a patient to place him in an asylum unless in many cases absolutely compelled to do so. Happily, in England a new plan had been adopted. A medical man receives one or two patients into his house and these patients are seen regularly by the commissioners and receive proper inspection. They secure the benefit of change of air, of environment, of diet, and are at all times under careful personal observation by the physician.

When a patient is cured he retires quietly to his home, and does not retain with him the unpleasant recollection that he has been committed to an asylum—a humiliating thought under the best of circumstances. The great objection to this plan was the expense involved to the patient.

Dr. Fisher read the next paper, written by Dr. Edward Cowles, entitled

NURSING REFORM,

which detailed the success which he has had at the McLean Asylum in training his nurses, and of the improved *esprit de corps* among the attendants and patients.

AFTERNOON SESSION.

Dr. W. W. Godding presented a paper entitled

INSANITY AS A DEFENSE FOR CRIME.

He denied that the test of a knowledge of right and wrong was a correct one to apply in determining the criminal responsibility of lunatics. Judges in the United States have made but a metaphysical study of insanity. They should obtain clinical knowledge of cases by visiting a hospital for the insane, and thus get rid of the idea that lunatics act reasonably in regard to their acts.

He believes that the New Hampshire ruling as to insanity, which Judge Cox on the Guiteau trial rejected as heresy—namely, that all questions on insanity were facts for the jury to determine, and not as rulings for the court—would one day prevail.

Dr. Savage then opened the discussion upon

SYPHILIS ASSOCIATED WITH GENERAL PARALYSIS.

General paralysis is not a definite disease, but a degeneration. Syphilis seems to have a distinct and special tendency to cause degeneration of the nervous structure. There is a difference in statistics as to the numerical relations between

syphilis and general paralysis. He believed that very many general paralytics had had syphilis, and that more general paralysis was due to syphilis.

He could not distinguish between general paralysis due to inherited weakness and that due to syphilis and that from any other cause. General paralysis associated with syphilis might begin in the brain or cord. Acute general paralysis might suddenly develop in cases of chronic syphilis. Dr. Savage gave a very interesting case of this form, in a man in whom syphilis had not manifested itself for several years, and in whom general paralysis had suddenly developed and gone on to a fatal termination in very brief time.

General paralysis with syphilis may run an ordinary course in every way, having no special cranial-nerve or other complication. In some of these cases the patients have a wan aspect, with capillary congestion about the face. There are very many cases in which the following history is given—viz., that there has been a cranial-nerve lesion which has improved under specific treatment, and later, symptoms of progressive degeneration have set in.

The nerve-lesion may be motor or sensory. He had had cases of ptosis followed by general paralysis, and of giddiness followed by general paralysis.

In cases of general paralysis associated with syphilis, some are spinal, and of these some are ataxic; others have degeneration in the lateral columns, with spastic symptoms. There may be eye troubles with either. The course which cases of general paralysis with syphilitic histories run differs in some particulars from others; it appears to be more subject to remission, and even to apparent cure.

The Section next listened to an address by Professor Mendel on

MORAL INSANITY.

He maintained that the term should be stricken from the nomenclature of mental diseases. Mental imbecility or paranoia, or something more tangible, should be adopted.

Dr. Savage said there were certain terms which we were at times obliged to use provisionally, and this was one of them. There were people with moral scars who did not deserve the term paranoia nor imbecile, unless we extend the term unduly. Of course I agree with Professor Mendel that we must be careful not to use in courts of law terms that we cannot define, but I still believe we shall have to use the term moral insanity.

Dr. Hughes did not question the existence of moral insanity, as described by Pritchard. He would substitute for the term moral insanity, because of the difficulty encountered in explaining its meaning in courts of law—"a state of imbecility associated with congenital mental defect."

The discussion upon the relation of syphilis to general paralysis was then resumed.

Professor Mendel's views were presented in German.

Dr. Mickle had often seen cases due to syphilis present the same symptoms as the ordinary every-day case of general paralysis. Other groups were those presenting at first local motor symptoms, local motor paralysis, or sensory symptoms, as well as nocturnal headache. There are local unilateral spasms, followed by paralysis. These paralyses clear up sometimes, but their more usual course is to gradually take on a complete hemiplegia. Such patients often present local symptoms late in the course of affection, such as ocular paralysis. Then when one comes to the necropsy, there is in this class of cases a pachymeningitis—a local one—affecting the dura on one side. Thickening if found on one side, and there is adherence of the meninges to the surface of the convolutions and erosion of the convolutions, which is so common in general paralysis.

There is often a somewhat diffuse yet circumscribed sclerosis affecting a greater or less tract of the cortex of the brain. That I have frequently found existing upon one side chiefly, or upon one side only. There is another group of cases of brain-syphilis and general paralysis. The affection often simulates its demented form. The patient has probably epileptiform convulsions, a local paralysis, more or less marked, and sometimes a monoplegia. Such patients often die in epileptiform seizures, and in an epileptic status. At the necropsy one finds the cerebral blood-vessels, particularly those of the circle of Willis, with their coats enormously thickened. Then they exhibit sometimes growths that are really syphilomatous, really a gumma of the arterial coat. At such times there is a diminution of the lumen of the vessels. This explains the degeneration which ensues in these cases.

In consequence of syphilitic arteritis, affecting the walls of the large blood-vessels, and in consequence of the syphiloma affecting their coats, and the thickening of the walls, there is an obstruction of the walls and a tendency to thrombosis, and as a result we get local softenings, and these give symptoms of ordinary paralysis. In these cases there are gummatuous infiltrations affecting other than arterial walls.

Dr. Down said that in his experience in Lon-

don hospitals he had come to the conclusion that nearly all cases of locomotor ataxy were of syphilitic character, that they all responded to specific treatment, and that they are, as a rule, syphilitic. He had had an opportunity of studying the question whether there was any connection between locomotor ataxy and general paralysis of the insane. He cited the case of a chaplain in a Welsh prison who had come under his observation suffering from locomotor ataxy of a progressive character. There was nothing else indicating trouble, but this man, after ten years, had some exaltation of mind which rapidly increased, and he soon became a general paralytic and died in about eighteen months after the first attack.

Dr. Yellowlees said one often sees cases of general paralysis in which there was constitutional syphilis running an ordinary course. He thought one should be careful as to stating the effect of syphilis in the history of the disease. He agreed emphatically with what Drs. Savage and Down had said about the probable syphilitic origin of those cases which begin with spinal symptoms, but we seem to have as a result in cases of general paralysis occurring in patients with a history of constitutional syphilis that the disease is modified to a greater or less extent by a greater tendency to local paralysis than in ordinary cases.

Dr. Nichols said in the large number of cases of general paralysis which he had treated some two-thirds, he thought, had had syphilis. He had really doubted whether syphilis was an essential cause of general paralysis of the insane. It seemed to him that those cases which he had not been able to trace to a syphilitic origin ran their course more regularly than those in which he could, and he had never been able to benefit a patient who had not had syphilis by any anti-syphilitic treatment, and he had retarded the progress of the case in many instances in which he knew that the patient had had syphilis. It had appeared to him that in some way the degeneration of the brain did take on a syphilitic character, although it was accompanied undoubtedly by gross lesions that were common to other forms of brain-degeneration. He might add that he had supposed that excessive venery, excessive intellectual labor, and loss of sleep, were the most efficient causes of general paralysis of the insane, and it seemed to him that they would cause it independently of syphilis.

Dr. Spitzka was obliged to differ very materially from the conclusions of the distinguished superintendent of the Bethlehem Asylum in some particulars. It was a new suggestion to him that all cases of general paralysis of the insane where spinal troubles, such as locomotor ataxy, precede the mental disturbance are syphilitic in their origin. One constantly growing evil seen in all large capitals was the habit of imperfect coitus indulged in for the prevention of conception. This has a most deleterious effect upon the spinal apparatus. Another was the vicious habit indulged in by those who are losing sexual power. These certainly were causes of locomotor ataxy. Dr. Spitzka thought that, notwithstanding the objections made yesterday and to-day, that we were justified in adopting the term syphilitic dementia. We are shown, in insane hospitals, cases of alcoholic dementia and cases of puerperal insanity.

Now, can you tell the characteristic symptoms of puerperal insanity? It is known in the peculiar combination of symptoms as a whole. Syphilitic dementia differs from ordinary paralytic dementia, or paretic dementia. He had seen hæmorrhages in brains, but not from those places in which they were usually found in cases of status epilepticus. Wendel in his monograph has pointed out many of the peculiarities by which we are able to differentiate cases of syphilitic dementia from ordinary cases of general paralysis of the insane, that there are changes found in ordinary cases of general paralysis that are not seen in cases of syphilitic dementia Dr. Spitzka then enumerated several differences which he found in post-mortems between these two classes of cases. In the matter of nomenclature, he said, we often strain at a gnat and swallow a camel. He could not see why this distinctive term should not be adopted. He believed wine, women, and worry the most potent factors in causing general paresis.

Dr. Hughes asked if any one present had made post-mortem examination of general paralytics who had died during remissions of the disease, particularly in cases where the patient had suffered from his first attack of insanity, and had died during the first remission?

Dr. Brush said he had seen just such a case—a patient who had died of phthisis during the first remission of the disease. The leisons usually found in general paralysis of the insane were found in this case. Dr. Brush was not sure but that the phthisis had acted in this case in bringing about the remission in much the same way as in the case mentioned by Dr. Savage, where the carbuncle had developed between his patient's shoulders.

Dr. Hurd believed we had all seen cases of general paralysis of unmistakable syphilitic origin. He would ask Dr. Savage, if he believed

any benefit would ensue in these cases from anti-syphilitic treatment?

Dr. Savage in reply cited the case of a patient who had suffered from paresis of a syphilitic origin, and who, after being put upon anti-syphilitic treatment, enjoyed a remission after a fortnight. He believed this a fair specimen of the results to be found in these cases. Certainly if these cases are not cured it seems to be the consensus of opinion that they are relieved. He believed that we have reached the high tide of syphilitic pathology, and that it was now time to mark a shore line. Dr. Savage did not like to have too definite lines drawn in the nomenclature of paralysis. Since we knew comparatively little of the relationship between syphilitic dementia and syphilitic general paralysis, we had better not be too definite.

SECTION ON DENTAL AND ORAL SURGERY.

Fourth Day—Morning Session.

MICROSCOPY.

Professor Frank Abbott, of New York, N. Y., and Dr. R. R. Andrews, of Cambridge, Massachusetts, were in charge of this department. Every facility was afforded the members of this section to acquaint themselves with dental microscopy, both physiological and pathological. Among the ground specimens shown by Professor Abbott were those of carious teeth, congenital pathological enamel, hyperostosis (osteomas) of the roots of teeth, and deposits of secondary dentine. Dr. Andrews exhibited serial slides of the developing teeth, and the development of the dental fibril. About forty negatives from his photomicrograph were especially interesting and valuable.

CLINICS.

About thirty gentlemen gave clinics in filling teeth with gold, pivoting teeth, constructing artificial dentures, and treating (surgically) diseased conditions of the gums.

Dr. C. L. Goddard, of San Francisco, California, read a paper entitled

PAIN IN THE TEMPORO-MAXILLARY JOINT CAUSED BY IRREGULARITY OF THE TEETH.

A patient, thirty years old, experienced pain in temporo-maxillary joint during mastication, which was caused by straining the muscles and ligaments, owing to masticating with the jaw protruded. When the teeth were brought together, as in the act of masticating the incisors alone touched, and the bicuspids and molars were about one-eight of an inch apart. The treatment employed consisted in spreading the upper teeth and thereby securing a proper articulation. Dr. E. A. Chisholm, of Tuscaloosa, Alabama, read a paper entitled

THE INFLUENCE OF WEATHER CHANGES ON THE HUMAN ORGANISM.

After carefully noting the influence exerted by temperature, humidity, and electricity, the author concludes that by far the greatest power over human organism is exerted by atmospheric pressure. In support of this theory he submits two arguments. The normal atmospheric weight on man is 14.7 pounds to the square inch at the sea level. The body is sustained by an equal power of resistance, wisely provided. If the pressure be less, the surface of the body will be distended, and the superficial circulation less restrained. This change can be brought about by exposure to great altitude, as well as by natural physical causes, when the circulation will be disturbed just the same. Any undue pressure on a portion of the body may then be felt. May not this disturbance of tension on soft tissues which are fixed to the bony framework of man, or where disease has a seat in periosteal and ligamentous attachments, be liable to greater inflammation? Or when the pulp of a tooth, which in a state of health is inclosed in a bony chamber (which has no expansive liberties, nor needs them as long as health continues), becomes exposed through a small aperture; when the normal atmospheric balance is lowered, the nerve has a tendency to be drawn through the aperture and takes on inflammation, probably followed by congestion and complete devitalization.

A report from the Pennsylvania Hospital, some years ago, on the observation of barometric pressure in surgical operations, shows that in 259 operations the barometer was ascending in 102, descending in 123, and standing in 34. Fifty-four of the whole number were fatal, 11 having been operated on with barometer ascending, 25 when descending, and 8 when standing.

Afternoon Session.

The Section was honored by a visit from the President of the Congress, Professor N. S. Davis. In introducing him President J. Taft recounted the efforts that had been put forth by Professor Davis to secure recognition to the Dental Section. To him more than to any other man in the medical profession is due the credit for having removed the obstructions in the way of the dental specialty.

Professor Davis replied: Twenty-two years ago I had the pleasure of entertaining the members of the American Dental Association, then assembled at Chicago. On that occasion I ex-

pressed the hope that some day, in the near future, we might meet on equal grounds. My hopes of that day are realized to-day. At the last meeting of the American Medical Association, when the question was brought up to admit dentists holding their degree from a recognized institution, it met with no opposition. The action of that body has forever removed the obstacle which had been in your way, and you are now on an equal footing with your medical brethren. He congratulated the members for the interest they took in the advancement of the healing art, and closed by warning them not to fall into "schools," but to meet everyone on the broad field of science.

Professor E. S. Talbot, of Chicago, Illinois, read a paper on

ETIOLOGY OF IRREGULARITIES OF THE JAWS AND TEETH.

This paper was very exhaustive and thoroughly well prepared. The writer showed throughout an intimate acquaintance with the subject, and the Section was not lacking in appreciation of his efforts.

The paper was discussed by Dr. W. C. Barrett, of Buffalo, New York.

A paper by Dr. J. J. R. Patrick, Belleville, Illinois, on "Irregularities," was read by title; also one by Dr. E. H. Angle, Minneapolis, Minnesota, entitled "Notes on Othodontia, with a New System of Regulation and Retention;" also by Professor L. C. Ingersoll, Keokuk, Iowa, on "Inflammation of the Oral Tissues."

To be Concluded in November Number.

BOOKS, NOTICES AND BOOK REVIEWS.

THE PRINCIPLES OF THEORETICAL CHEMISTRY, WITH SPECIAL REFERENCE TO THE CONSTITUTION OF CHEMICAL COMPOUNDS. By IRA REMSEN, Professor of Chemistry in the Johns Hopkins University. Third Edition. Enlarged and thoroughly revised. Pp. xi and 318, duodecimo. PHILADELPHIA: LEA BROTHERS & Co. 1887.

The author has undertaken to give a clear and yet simple explanation of the theory of the constitution of chemical compounds. He admits the impossibility of final knowledge in regard to many of the claimed facts of the science of chemistry, and the probability of future changes in what are now believed to be established facts. The book is admirable in every respect, and is especially worthy of the careful attention of physicians.

THE PRINCIPLES OF ANTISEPTIC METHODS APPLIED TO OBSTETRIC PRACTICE. By DR. PAUL BAR. Translated by HENRY D. FREY. Pp. vii and 175. PHILADELPHIA: P. BLAKISTON, SON & Co. CHICAGO: W. T. KEENER. 1887.

There is no evidence in this book which shows when it was written, but it is evidently of recent date, and the author's notes, marked by brackets in the text, make it a reliable guide in its special field. It is systematically arranged and the list of authorites upon which it is based is large. It is a practical book but much larger than the subject matter which it contains demands.

DIFFERENTIAL DIAGNOSIS: A MANUAL OF THE COMPARATIVE SEMEIOLOGY OF THE MORE IMPORTANT DISEASES. By F. DE HAVILLAND HALL, M. D. Third enlarged American edition. Edited by FRANK WOODBURY, M. D. Pp. xi. and 255. PHILADELPHIA: D. G. BRINTON. 1887.

The additions in this edition are principally in the chapter on diseases of the nervous system. In its present form the book will not only retain its many old friends, but it is certain to gain many new ones. It is a most excellent and useful book.

VASO-RENAL CHANGE VERSUS BRIGHT'S DISEASE. By J. MILNER FOTHERGILL, M. D., EDIN. Pp. xii. and 219. NEW YORK: G. P. PUTNAM'S SONS. 1887. CHICAGO: W. T. KEENER.

This volume will be a welcome addition to the list of the author's works, to all those who like his writings, either because of or despite, their peculiar literary style, or because of their suggestiveness and practical value. He deprecates his own unfitness for the task, which his title implies, and says that he has attempted it because it ought be performed by someone, and there seems to be no other volunteer. He claims that the high vascular tension characteristic of the class of diseases under discussion is due to irritation caused by the presence of uric acid on the blood, and that all the subsequent tissue changes are accounted for by this high tension. The author is more of a medical philosopher than a scientific investigator, and admits that most of his pathological histology and experimental physiology is derived from the work of others, but the development of his thesis is in his own peculiar and discursive style. The text is very fully illustrated with lithographic plates drawn from actual microscopical preparations, and this part of the work has been done with an accuracy, skill and care which leave nothing to be desired in the drawings as they appear in the book. The printing and binding are also admirable.

E. W.